

Rhodora

JOURNAL OF THE
NEW ENGLAND BOTANICAL CLUB.

Conducted and published for the Club, by

BENJAMIN LINCOLN ROBINSON Editor-in-chief.

FRANK SHIPLEY COLLINS

MERRITT LYNDON FERNALD

HOLLIS WEBSTER

} Associate Editors.

WILLIAM PENN RICH

EDWARD LOTHROP RAND

} Publication Committee.

Vol. 5.

December, 1903.

No. 60.

CONTENTS:

Pursh's Report of Dryas from New Hampshire. <i>M. L. Fernald</i>	281
Lobelia \times syphilitico-cardinalis. <i>Oakes Ames</i>	284
Woodsia glabella in Maine. <i>J. F. Collins</i>	286
Records of Wolffia in Massachusetts. <i>B. L. Robinson</i>	287
Matricaria discoidea in New Hampshire. <i>E. L. Rand</i>	288
New Stations for Maine Plants. <i>E. B. Chamberlain</i>	289
Trisetum in Andover, Massachusetts. <i>A. S. Pease</i>	289
Lycopodium Selago on Mt. Holyoke. <i>G. F. Freeman</i>	290
Cuscuta trifolia in Massachusetts. <i>A. V. Osmun</i>	290
New Station for Phaseolus perennis. <i>E. B. Harger</i>	291
On Corallorhiza and Taraxacum. <i>J. F. Collins</i>	291
Errata	292
Index	293

Boston, Mass.

740 Exchange Building.

Providence, R. I.

Preston and Rounds Co.

Printed by Edward W. Wheeler, Cambridge, Mass.

RHODORA.—A monthly journal of botany, devoted primarily to the flora of New England. Price \$1.00 per year (\$1.25 to all foreign countries except Canada); single copies 15 cents. Volume 1, \$1.50. All remittances by check or draft, except on Boston or New York, must include ten cents additional for cost of collection. Notes and short scientific papers, relating directly or indirectly to the plants of the northeastern states, will be gladly received and published to the extent that the limited space of the journal permits. Forms will be closed five weeks in advance of publication. Authors (of more than one page of print) will receive 25 copies of the issue in which their contributions appear. Extracted reprints, if ordered in advance, will be furnished at cost.

Address manuscripts and proofs to

B. L. ROBINSON, 3 Clement Circle, Cambridge, Mass.

Subscriptions, advertisements, and business communications to

W. P. RICH, 300 Massachusetts Avenue, Boston, Mass.

Single copies may be had from

E. L. RAND, Corresponding Sec'y N. E. Botanical Club,
740 Exchange Building, Boston, Mass.

Entered at Boston, Mass., Post office as Second Class Mail Matter

FLORA OF THE SOUTHEASTERN UNITED STATES. Just issued!

By JOHN K. SMALL, Ph. D. Being descriptions of the Flowering and Fern-Plants growing naturally in North Carolina, South Carolina, Georgia, Florida, Tennessee, Alabama, Mississippi, Arkansas, Louisiana and The Indian Territory, and in Oklahoma and Texas east of the one hundredth Meridian, with analytical keys to the Orders, Families, Genera and Species.

Large octavo, pp. x + 1370. Price \$3.60.

Subscriptions may be sent to DR. JOHN K. SMALL, Bedford Park, New York City.

MOSESSES with Hand-Lens and Microscope. Part I. 86 pages, $7\frac{1}{2} \times 10\frac{3}{8}$ inches. 9 full page Plates and about 100 Cuts in the text. The HAND-LENS CHARACTERS are fully emphasized so that these alone are often sufficient to determine the plant and in addition the MICROSCOPIC CHARACTERS are treated in the same untechnical manner. Part I. contains a complete TEXT-BOOK on Mosses and a systematic treatment of the families part way through the Dicranaceae. Price \$1.00, post-paid. Sample pages free.

A. J. GROUT, PH. D., 360 LENOX ROAD, BROOKLYN, N. Y.

STUDENTS OF MUSHROOMS AND OTHER FLESHY FUNGI

Should have Prof. Burt's Key to the Genera of the Basidiomycetes, and Dr. Daniels's Glossary (1000 terms), published by the Boston Mycological Club. Price, 25c. each. Address Box 21, Cambridge, Mass.

GROUT

MOSESSES WITH A HAND-LENS. Seventy-five pages, \$1.10 net, post-paid.

MOSESSES WITH A HAND-LENS AND MICROSCOPE. Part I. 86 pages. \$1.00 net, post-paid. Sample pages on application.

O. T. LOUIS, 59 FIFTH AVENUE, NEW YORK CITY.

Advertisements of Nurserymen and Dealers in Botanical and other Scientific Publications are inserted in these pages at the following rates per space of 4 in. by 3-4 in. 1 year \$4.00, 6 months \$2.50.

Rhodora

JOURNAL OF

THE NEW ENGLAND BOTANICAL CLUB

Vol. 5

December, 1903

No. 60

PURSH'S REPORT OF DRYAS FROM NEW HAMPSHIRE.

M. L. FERNALD.

IN his *Flora Americae Septentrionalis* Pursh described in 1814 *Dryas tenella* from "the white hills of New Hampshire. Prof Peck. July. v. s. in *Herb. Banks*"¹; and since that time American botanists have sought in vain for the plant and have wished in vain to know Peck's station in the "White Hills."

Pursh's description clearly places his plant with the earlier *Dryas integrifolia*, Vahl, of Greenland, and under this name it was taken up by Dr. Gray in five editions of his Manual, though, for some unaccountable reason, in the sixth edition Watson and Coulter altered the name and description to *D. octopetala*.

Three species of *Dryas* are generally recognized in high northern regions, all of them occurring in North America. *D. octopetala*, L., the only species of Europe, reappears in the mountains and on the coast of northwestern America, but is thus far unknown east of the Rocky Mountains. *D. integrifolia*, Vahl, with entire or subentire leaves and white petals, is definitely known from Greenland across Arctic America to Behring Straits, and south in the East to Newfoundland and Anticosti Island, Quebec. *D. Drummondii*, Richardson, the largest and handsomest of the genus, with coarsely toothed leaves and yellow petals, grows on sandy and gravelly shores in the northern Rocky Mountains, on Anticosti Island, and by the rivers of Gaspé County, Quebec.

According to Pursh's statement the original material of his *Dryas tenella* was collected by Prof. Peck² "on the white hills of New

¹ Pursh, Fl. 350.

² William Dandridge Peck, Massachusetts Professor of Natural History, Harvard College, 1805-1822.

Hampshire," and was in the herbarium of Sir Joseph Banks. During the past summer, therefore, the writer was interested to examine the material of *Dryas* in the Banksian Herbarium at the British Museum of Natural History. No material from Peck was found, and the only sheet clearly belonging in the original Banksian Herbarium was marked *Dryas tenella*, Pursh. This sheet contains three specimens, with the data indicated on the back of the sheet, two of the specimens collected before the publication of Pursh's species, the other a comparatively modern one from Labrador. The two older collections are from "1. Newfoundland, Inglie Island in the mouth of the harbour J. B[anks],"¹ and "2. Labrador, D. Nelson 1781."

Although there is the barest possibility that a Peck specimen may have once existed and is now lost, the fact that for nearly a century so conspicuous a plant as *Dryas integrifolia* has been sought in vain by the botanical explorers who have scoured the "White Hills" of New Hampshire, has long since thrown doubt upon the accuracy of Pursh's original data. Furthermore, since Pursh cited a specimen in the Banksian Herbarium and since there is in that Herbarium a plant which well agrees with the description of *D. tenella* and is so labeled, it seems still more probable that Pursh was in error in citing the plant from New Hampshire. As a result of examination of the data now at hand the following suggestion is offered as possibly explaining the source of error.

A detailed study of the charts of the United States Hydrographic Survey shows only one island on the Newfoundland coast which could have been intended by Banks as "Inglic" Island. This is Englee or Grévigneux,² a steeply scarped island hardly a mile in length, with its nine naked summits nearly hiding the entrance to Bide Arm, the northernmost fjord of Canada Bay. Directly west from Grévigneux (Englee) there rise from the shore of Canada Bay the Cloud Hills, 1195 feet high, an eastern lobe of the Long Range, which forms the backbone of western and northern Newfoundland and northward is generally referred to indefinitely as the White Hills; though in its most restricted sense the name White Hills is confined to the northernmost extension of the Long Range about Hare Bay, twenty-five miles north of Grévigneux (Englee) Island.

¹ Collected during the "voyage to Newfoundland and Labrador commencing April ye 7th and ending November ye 17th, 1766."

² See U. S. Hydrographic Survey Chart no. 794.

During the preparation of his Flora Pursh was associated with Banks,¹ who would naturally tell him of that portion of North America (Newfoundland and Labrador) which he, Banks, had explored but which Pursh had never seen. It is most probable that the White Hills were mentioned by Banks who had collected the *Dryas* on a rugged island off shore from some of the principal peaks of that range, and that Pursh, to whom Newfoundland was an unfamiliar region, confused the Newfoundland mountains with the "White Hills of New Hampshire," whose alpine plants were familiar to him through the collections of Peck.² This very natural error is rendered more probable by the fact that the data accompanying the Banksian plant is on the reverse side of the large herbarium-sheet and is not apparent to the hasty observer. And Pursh must have made hasty observations and notes; for the tremendous work of actually preparing his Flora was accomplished with almost unprecedented speed, in less than two years, during which time he not only organized his own material and notes secured during twelve years in America and examined among others the herbaria of Banks, Lambert, Clayton, Pallas, Plukenet, Catesby, Morison, Walter, and Sherard, but was constantly handicapped by the restless spirit which controlled his entire life.³

In view, then, of the evidence derived from the Banksian Herbarium there is little question that the original *Dryas tenella* came from an island close under the White Hills of northern Newfoundland, and that Pursh was in error in crediting it to New Hampshire. Should the plant be found hereafter on our own "White Hills" it may be safely considered a new discovery.

GRAY HERBARIUM.

¹"Sir Joseph Banks, with his accustomed liberality, supported my undertaking by giving me access to his extensive library and herbarium."—Pursh, l. c. xvi.

²"During my journey [from Wiscasset] towards New York, I had an opportunity of visiting Professor Peck of Cambridge College near Boston, and seeing his highly interesting collection of plants, collected on a tour to the alpine regions of the White Hills of New Hampshire. As the season was too far advanced when I was in that country to suffer me to think of ascending those mountains, this collection was highly gratifying to me."—Pursh, l. c. xv.

³"The whole study must have been rapid. The despatch is wonderful. One can hardly understand the ground of the statement made by Lambert to my former colleague, Dr. Torrey, that he was obliged to shut Pursh up in his house in order to keep him at his work."—Gray, Am. Jour. Sci. 3, xxiv, 325.

LOBELIA × SYPHILITICO-CARDINALIS.

OAKES AMES.

(Plate 49.)

Lobelia × *siphilitico-cardinalis* was raised by means of artificial pollination many years ago. It has also been reported to occur as a natural hybrid where the parent species are associated. The plants referred to in this brief note were obtained from seeds by Mr. Robert G. Leavitt, who pollinated flowers of *L. siphilitica*, L., with pollen of *L. cardinalis*, L., in the late summer of 1901. During the following year flowers were produced by several of the hybrids and in August, 1903, nearly all of them came into bloom. The variation in flower color was well marked, and for the most part the color values were intermediate.¹ In several cases, however, the corollas showed not the faintest trace of blue, although their structural features were midway between the parent species. One plant had corollas with a white ground, suffused, minutely mottled, and sparingly spotted with pink. Sixteen plants gave rise to flowers of a rich shade of magenta-crimson, which exhibited an almost perfect mingling of the blue-violet of *L. siphilitica* and of the deep red of the pollen parent. Three had flowers of a peculiar red tone much like that of *L. cardinalis*.

In their structural details the hybrid plants were exactly intermediate. Beginning with the calyx a beautiful intermediary series was apparent in the formation of the tube and its auricles, in the relative length of the lobes, and in the length and density of the hairs. In all the plants which bloomed there was but slight variation in the essential characters indicative of the hybrid origin of this organ. The corollas, on the other hand, were more conspicuously intermediate, and owing to the vast dissimilarity between the parents this part of the flower offered unusual opportunities for a study of mingled parental traits. The corolla-tube of *L. cardinalis* is slender near the summit and broadest near the base, while just the reverse is true of *L. siphilitica*. In the hybrids, without exception, a tube approximately equal in diameter from base to top was a conspicuous mean. The corolla-lobes were as remarkable in outline, direction

¹ The term intermediate is used here to signify a mean between the parents.

and measurement. The lower lip showed plainly the influence of *L. cardinalis* on the form and width of the middle lobe and the tendency of *L. syphilitica* to shorten it. In the specimens studied the middle lobe of *L. cardinalis* measured 4.5 mm. in width by 19 mm. in length, of *L. syphilitica* 4 mm., by 12 mm., of the hybrid 4 mm. by 15 mm. Of the upper lip the lobes were not so divergent as in *L. cardinalis*, nor so convergent as in *L. syphilitica*, an interesting point to note, as it shows how far reaching are the effects of hybridization.

The occurrence of scattered hairs on the corolla of the hybrid was of course attributable to *L. syphilitica*, which has conspicuous hairs on the mid-veins of its corolla-lobes. The corolla of *L. cardinalis* is glabrous, and it is undoubtedly the tendency of this species toward glabry which brought about the decided reduction in the number and length of the hairs in the hybrid. The usual effect of hybridization, when one parent is glabrous, is to reduce trichome structures in length and number, a tendency well illustrated by the case in hand and by *Spiranthes* × *intermedia* described by the writer in RHODORA, v. 261.

The texture, form and green of the leaves in *Lobelia* × *syphilitico-cardinalis* proved to be intermediate in all the plants examined; the surface, scabrous to the touch, indicated clearly the influence of *L. syphilitica* and at the point of origin from the stem the leaf-bases were midway in their resemblance to the parent species. Although in outline the leaves of *L. syphilitica* and *L. cardinalis* are quite unlike, it was not apparent at a casual glance just how the hybrid leaf resembled its parents. In the accompanying plate three leaves are shown which were selected at random. The one taken from *L. cardinalis* tapers gradually from the base upwards, while that of *L. syphilitica* is broadest above the middle, and conspicuously narrowed downwards. The hybrid leaf is broadest just above the middle and tapers both ways.

In *L. cardinalis* the style closely invested by its connate stamens ultimately projects beyond the corolla-tube by about half its length, in *L. syphilitica* on the contrary, the style projects but slightly beyond the mouth of the corolla-tube. The hybrid, however, was quite intermediate in this respect as the style exceeded the corolla-tube, at maturity, by less than half its length.

None of the hybrids produced seeds naturally in the garden where

they were grown, nor did fertilization follow when pollen was transferred to the stigmas by hand, although both *L. syphilitica* and *L. cardinalis*, near by, had well developed pods of fertile seeds.

The reverse cross of the hybrid was not obtained by Mr. Leavitt, but according to Carl Friedrich v. Gärtner in his "Versuche und Beobachtungen über die Bastarderzeugung im Pflanzenreich," page 223, it is not distinguishable from *Lobelia* \times *syphilitico-cardinalis*. Often when species much given to variation are crossed, the hybrid progeny is apt to present many puzzling combinations of the parental traits. This frequently gives origin to the belief that certain peculiarities may be accounted for by the rôle played by the parent species according as one or the other happens to be male or female. However, some species may bring about extensive variations in hybrid forms no matter what part they have taken in fertilization and these variations will occur whether the species in question is used as a seed- or a pollen-parent. Of course it has been stated by hybridists, whose testimony cannot be doubted, that differences which show maternal and paternal influences in an unmistakable way, do occur in reciprocal crosses. But it has been the writer's experience that the variation in the progeny of reciprocal crosses, especially when distinct species are used, is not necessarily the result of the disposition of the parents as male and female, but the consequence of individual traits which are apt to appear in similar combinations no matter which of the parents bears the seed or furnishes the pollen.

The accompanying plate was carefully prepared from the first hybrid which bloomed, a plant with magenta-crimson flowers. For the sake of contrast the hybrid was placed in the centre of the plate with *L. cardinalis* on the left and *L. syphilitica* on the right.

AMES BOTANICAL LABORATORY, North Easton, Massachusetts.

WOODSIA GLABELLA IN MAINE.—On the 1st of September, 1903, I collected a few specimens of *Woodsia glabella*, R. Br., in Township No. 1, East of the Kennebec, Fifth Range of Bingham's Purchase. The specimens were well fruited but not very abundant. This rare and interesting species appears to have been hitherto unrecorded for Maine.—J. FRANKLIN COLLINS, Providence, Rhode Island.

RECORDS OF *WOLFFIA COLUMBIANA* IN MASSACHUSETTS.

B. L. ROBINSON.

IN his valuable paper upon the Lemnaceae of America Mr. C. H. Thompson states that he has examined specimens of *Wolffia columbiana*, Karst. from "Massachusetts, Robbins, 1870." There seems to be good reason to doubt the accuracy of this record, and as at least one manual of our flora has already extended the range of the species in question, apparently on the basis of Mr. Thompson's revision, it is worth while to inquire whether the Massachusetts record is not founded merely on a clerical error.

It is true that Dr. J. W. Robbins did collect *Wolffia columbiana* on three occasions, namely in 1829, 1867, and 1870, but in all these instances he obtained his material from Connecticut. The earliest collection is represented in the Gray Herbarium and bears Dr. Robbins's quaint and formal Latin label, which reads: PLANTAE NOVAE ANGLIAE ROBBINSIANAE. *Wolffia* n. sp. Legit Sept. 1829 e lacusculæ prope pagum New Milford, Con., cum tribus Lemnae speciebus, J. W. Robbins, M. D., Uxbridge, Mass." On the same sheet is a second collection by Robbins from Salisbury, Connecticut, the label bearing in Dr. Gray's hand the following amplification of the locality: "N. Canaan depot. In a large pool, a few rods (20-60) west of the bridge over the Housatonic, on the S. side of the road leading to Plumb's Pond—say a mile from the depot." These specimens were borrowed and examined by Mr. Thompson during his work on the Lemnaceae and on the sheet he has noted his identification of the specimens as *W. columbiana*. It will be noted that Mr. Thompson has cited in his monograph no specimens of this species from Connecticut, and that the date which he assigns to Robbins's collection was 1870. Inferring that he might have seen specimens of Robbins's collecting in some other herbarium also, I have written to Professor William Trelease, Professor N. L. Britton, and Dr. J. N. Rose, to learn if such specimens were to be found in the herbaria of the Missouri Botanical Garden, the New York Botanical Garden, or the National Museum respectively. None was found at St. Louis or at Washington, but in the Torrey Herbarium at New York, Dr. Britton found, and very kindly forwarded to me in

part, some specimens collected by Robbins at Dutcher's Bridge Salisbury, Connecticut, 13 August, 1870.

From the facts here presented, it must be inferred that in recording the stations for *Wolffia columbiana*, Mr. Thompson made that very natural clerical error of copying not the locality where Robbins obtained the plant but the personal address, Uxbridge, Massachusetts, which according to a practice once common and always likely to mislead, Robbins had had printed upon his labels. Connecticut is therefore the only New England state from which *Wolffia columbiana* has been secured with certainty. However, the northernmost station in Connecticut is so near the Massachusetts boundary that there is a considerable probability that the species extends over the line.

It seems a pity that Dr. Robbins, who not only discovered this our smallest New England flowering plant but had the rare discrimination to recognize its novelty and correct generic affinity, should never have recorded in print his observations concerning it. More than thirty-five years passed after the original discovery by Robbins before the species was characterized and named by Karsten in Germany upon the basis of type material from Colombia in South America.

GRAY HERBARIUM.

MATRICARIA DISCOIDEA IN NEW HAMPSHIRE.—While collecting New Hampshire plants with a party of botanists on June 14, 1903, I found by the roadside near the shore at Wallis' Sands in the town of Rye, a small colony of the Pine Apple Weed (*Matricaria discoidea*, DC.). The plants were of good size, but not many in number. At some distance, however, another much larger colony of smaller plants was found. From the observations I have made in Maine regarding the habits of this plant, I consider that in a very few years it will be abundant in this part of Rye. Mr. A. A. Eaton writes me that this *Matricaria*, so far as he knows, is not established in New Hampshire; and it does not appear in the Manchester List. It may be well, therefore, to record this station for a weed which has a most redeeming quality in its pleasant odor.—EDWARD L. RAND, Boston.

NEW STATIONS FOR MAINE PLANTS.—In July, 1903, a few plants of a peculiar *Hieracium* were collected by the writer near Skowhegan, Maine, under the impression that they were *H. praealtum*, L. Specimens have since been determined at the Gray Herbarium as *Hieracium floribundum*, Wimm. & Grab. This species has previously been collected by Dr. Kennedy at Cutler, Me., (RHODORA, IV, 25.) and at St. John and Bathurst, N. B., by Mr. Williams and Mr. Fernald.

Later in the summer the writer and Mr. C. H. Knowlton found several specimens of *Polygonum exsertum*, Small, growing at the edge of salt marshes at Pine Point, Scarborough, Me., a station intermediate between that of Mr. Bicknell at York, Me., and that of Messrs. Williams and Fernald at Bathurst, N. B.

Scirpus rubrotinctus confertus, Fernald, is in my herbarium from Cumberland and Farmington, Me., localities which extend the range in both directions from the station at Greene, Me., mentioned by Mr. Fernald (RHODORA, II, 21.) in his description of the variety.—EDWARD B. CHAMBERLAIN, Washington, D. C.

THE GENUS *TRisetum* IN ANDOVER, MASSACHUSETTS.—On June 8, 1903, while collecting in a boggy meadow in Andover, Massachusetts, in which were growing *Salix myrtilloides*, *Poterium Canadense*, *Carex exilis*, and other plants of interest, I noticed a strange grass and gathered a few specimens of it. These were later identified for me at the Gray Herbarium as *Trisetum palustre*, Torr. This seems to be an unusually northern station for this species which is said by the Sixth Edition of Gray's Manual to grow from southern New York to Illinois and southward. I have seen specimens from Norwood, Massachusetts, and that vicinity; but it is possible that Andover is at present its northern known limit.

On September 19, of this same year, I visited the rocky banks of the Merrimac River in the northwestern part of Andover. Here grow many species not abundant in this section of the State (*e. g.* *Acer Pennsylvanicum*, *Kalmia latifolia*, *Campanula rotundifolia*), and here, in the clefts of steep ledges, I found the other of the two species of *Trisetum* mentioned in Gray's Manual—*Trisetum subspicatum*, Beauv., var. *molle*, Gray. On account of the lateness of the season the plants were in poor shape for collecting but were still perfectly recognizable. This species the Manual describes as found from

northern New England to Lake Superior and northward, but Britton takes it south *in the mountains* to North Carolina. Its occurrence in the eastern part of Massachusetts is interesting, and even more remarkable is the coincidence in one town of only moderate elevation of these two species of one genus, one of an essentially northern and mountainous range, the other perhaps reaching here its northern limit.—ARTHUR STANLEY PEASE, Andover, Massachusetts.

LYCOPodium SELAGO ON MT. HOLYOKE, MASSACHUSETTS.—As a new station for a rare plant is always of interest to botanists, it may be worth while to record in RHODORA the occurrence of *Lycopodium Selago* at a second station in Massachusetts. I say second although I am aware that it has been reported both at Greylock and on Mt. Watatic. Its occurrence in the latter place, however, I consider extremely doubtful since the only direct reference to its being there is found in a flora gotten up by high school students who, I am informed by persons who happened to know something of their methods, were not in every case sufficiently careful. Furthermore, I am unable to locate specimens coming from Mt. Watatic.

The new location which I mention is the extreme summit of Mt. Holyoke, just west of the "Notch," where the *Lycopodium* was found growing at an elevation of about 960 feet on the north side of cliffs. There was only one limited station and the plants were few in number.

A search of the neighboring peaks failed to show more of this species. Specimens from the Mt. Holyoke station may be found in the Gray Herbarium and in the herbarium of the Massachusetts Agricultural College.—GEORGE F. FREEMAN, Asst. Prof. of Botany, Mass. Agr. College, Amherst.

CUSCUTA TRIFOLIA IN MASSACHUSETTS.—Some time ago complaint was received at the Hatch Experiment Station from a farmer living in Winchester, Massachusetts, that a large field of red clover (*Trifolium pratense*, L.) had been greatly damaged by dodder. He claimed the dodder was so thickly established that raking the cut clover was practically impossible. Later a large bundle of the infested crop was sent to the Station. The dodder had so completely intertwined

itself around and between the stems of the clover, that not a single one could be separated from the others without breaking several of the parasitic filaments.

Specimens of the dodder were sent to Mr. F. H. Hillman, Assistant Botanist, Seed Laboratory, U. S. Department of Agriculture, Washington, who identified them as *Cuscuta trifolia*, Babgt. Mr. Hillman claims that this is distinctly different from *Cuscuta Epithymum*, Murr. This being true, we have to report a new species of *Cuscuta* from Massachusetts. But even if *C. trifolia* and *C. Epithymum* are conceded to be identical, we are unable to learn that a *Cuscuta* under the latter specific name has been reported from this State.

Later the same species was reported from Spencer, Massachusetts, where it had done much damage to a field of clover.—A. VINCENT OSMUN, Amherst, Massachusetts.

A NEW STATION FOR PHASEOLUS PERENNIS.—A station discovered by the writer Aug. 18, 1903, carries the known range of *Phaseolus perennis* about twenty-five miles northeasterly from the station noted by Mr. Bissell (RHODORA iv:13) to a point near the Housatonic River in the town of Huntington. Mr. Bissell's description of the Norwalk station would apply almost word for word to this one, except that the marsh near the border of which it is located is hardly even brackish.—E. B. HARGER, Oxford, Connecticut.

CORALLORHIZA INNATA AND TARAXACUM ERYTHROSPERMUM IN RHODE ISLAND.—Three species of *Corallorhiza* have been definitely recorded, in print, from New England. Two of these, *C. odontorhiza*, Nutt., and *C. multiflora*, Nutt., have been reported from all six of the states and the third, *C. innata*, R. Br., from all except Rhode Island. Mr. E. F. Williams mentions¹ having seen specimens of all three species from all the states recorded above with the exception of *C. odontorhiza* from New Hampshire. It is a pleasure to be able to report the finding of *C. innata* in Rhode Island. I collected several specimens of it in good flower on the 10th of May, 1903, in a swamp in North Smithfield.

On the same date and within half a mile of the same station

¹ RHODORA, 4:18 (1902).

(and likewise in North Smithfield) I collected several specimens of *Taraxacum erythrospermum*, Andrz., growing in the sandy roadside. Messrs. R. L. Bowen and N. O. Howard, who were with me at the time, also took specimens. I believe this plant has never been reported from Rhode Island, although it was collected by Messrs. E. B. Chamberlain, E. E. Whipple and the writer in Lincoln, on the 15th of June, 1901. At the latter station it was growing in the crevices of a dry ledge.—J. FRANKLIN COLLINS, Providence, R. I.

[May 12, 1896, Miss E. L. Shaw found *Corallorhiza innata* on Taunton Avenue, East Providence, Rhode Island. A detailed and characteristic drawing of the plant was preserved by Miss Shaw.—Ed.]

ERRATA.

Page 11, line 12; for ARTICUM read ARCTICUM.

" 11, " 14; " LEPTODERUM read LEPTODERMUM.

" 14, " 41; " *Euteromorpha* read *Enteromorpha*.

" 33, " 23; " *Conioselium* read *Conioselinum*.

" 45, " 31; " *angustifolia* read *angustifolia*.

" 51, " 34; " *Temnomia* read *Temnoma*.

" 71, " 22; " *angusti, folia* read *angustifolia*.

" 97, " 9, page 100, line 34, and page 101, line 32, for *Simonsii* read *Simsoni*.

" 120, line 38; for 1902 read 1903.

" 126, " 29; " district read distinct.

" 165, " 25; " Lavalley read Laval.

" 176, " 11; " campanalate read campanulate.

" 176, " 21; " *Ravenellii* read *Ravenelii*.

" 203, " 40; " *nititans* read *nictitans*.

" 224, " 9; " *minor* read *minus*.

" 230, " 6; " *angustifolius* read *angustifolius*.

" 230, " 6; " *Turritus* read *Turritis*.

" 236, " 20; " Batterkill read Battenkill.

" 240, lines 33 and 35; for phlange read flange.

" 255, line 13; for *Calocyndricus* read *Calocyndrus*.

" 264, " 28; for segegates read segregates.

" 279, " 31; and 280, line 28; for *Tuckermanni* read *Tuckermani*.

INDEX TO VOLUME 5.

Names of new plants are printed in full face type.

- Abies balsamea*, 36.
Acer pennsylvanicum, 35, 49, 289;
 rubrum, 132, 134; *saccharinum*, 132;
 saccharum, var. *nigrum*, 236; *spica-*
 tum, 35.
Acorus Calamus, 132.
Acroblaste, 208, 209, 210; *Reinschii*,
 208, 209.
Actaea, 79; *alba*, 49, 132; *spicata*, 79,
 var. *rubra*, 77.
Actinococcus aggregatus, 232; *peltae-*
 formis, 232; *subcutaneus*, 232.
 Additional Notes on *Botrychium tene-*
 brosum, 274.
 Additions to the vascular Flora of Mt.
 Ktaadn, 46.
Agropyron caninum, 36.
Agrostemma Githago, 188.
Aizoaceae, 188.
Ajuga, 154; *genevensis*, 154, in New
 England, 154; *reptans*, 154.
Albugo, 107.
Alder, 44, 153.
Aldrovanda, 267.
Algae, 79, 107, 120, 135, 220, 252;
 Green, 2; *Marine*, 135; *Notes on*,—
 V, 204; *VI*, 231; *Red*, 1.
Alisma, 86, 87, 88; *Plantago*, 86, 89,
 132; *subulatum*, 85; *tenellum*, 86,
 87, 88, 89.
Alismaceae, 86, 87.
Allium canadense, 132.
*Alnus*¹ *incana*, 132; *serrulata*, 132;
 viridis, 35.
Amaranthus retroflexus, 135.
Amelanchier canadensis, var. *oblongi-*
 folia, 132; *oligocarpa*, 35; *spicata*,
 49.
America, *Galium erectum* and *Asper-*
 ula galioides in, 173; *The Ulvaceae*
 of, 1.
American Representatives of Luzula
 vernalis, 193; *White Weed*, *Chrysanthemum*
 Leucanthemum and the,
 177.
Ames, O. *Lobelia* × *syphilitico-cardi-*
 nalis, 284; *Natural Hybrids in Spir-*
 anthes and *Habenaria*, 261.
Ammophila arundinacea, 131.
Ampelopsis quinquefolia, 132.
Anabaena, 80.
Anacamptodon, 201; *splachnoides*, 201.
Anaphalis margaritacea, 50.
Andover, Massachusetts, Genus *Trise-*
 tum in, 289.
Andromeda americana, 71; *canadensis*,
 71; *glaucophylla*, 70, 71, *Andromeda*
 Polifolia and, 67; *Marsh*, 68; *Poli-*
 folia, 67, 68, 69, 70, 71, 133, and
 Andromeda glaucophylla, 67, β , 70,
 var. *angustifolia*, 68, 69, 71, var.
 glaucophylla, 71, var. *latifolia*, 68,
 69, 70, 71, var. *media*, 68, 69, 70, var.
 minima, 71, var. *oleifolia*, 71, var.
 revoluta, 71, var. *rosmarinifolia*, 71,
 var. *subulata*, 71; *rosmarinifolia*, 69,
 71.
Andropogon scoparius, 128.
Anemone, 154; *multifida*, 154, 155;
 nemorosa, 130; *quinquefolia*, 155;
 riparia, 154, 155, *Red-flowered*, 154;
 virginica, 130; *Wood*, 155.
Anithista, 249.
Anthelia Juratzkana, 171.
Anthoceros laevis, 173; *punctatus*, 173.
Anthocerotaceae, 173.
Anychia capillacea, 190, 203; *dicho-*
 toma, 190, 203.
Aphyllon uniflorum, 136.
Apocynum androsaemifolium, 129.
Apoglossum Montagneanum, 206, 207.
Aquilegia canadensis, 128.
Arabis, 225, 226, 228; *brachycarpa*, 226,
 228, 229, 230, 231; *canadensis*, 203,
 236; *confinis*, 226, 227, 228, 229, 230,
 231, var. *brachycarpa*, 227, 231; *con-*
 nexa, 230, 231; *divaricarpa*, 231;
 Drummondii, 228, 229, 230, 231, and
 its eastern Relatives, 225, var. *brachy-*
 carpa, 231, var. *connexa*, 231; *Drum-*
 mondii, 226, 227, 230, var. *brachy-*
 carpa, 227; *Holboellii*, 228; *laevigata*,
 226, 227, 230; *oxyphylla*, 229, 230;
 retrofracta, 228; *stricta*, 230.
Aralia hispida, 128; *nudicaulis*, 49,
 132.

- Arceuthobium*, 49; *pusillum*, 49, 202.
Archilejeunea clypeata, 171; *Sellowiana*, 171.
Arctium Lappa, 135.
Arctostaphylos Uva-ursi, 128.
Arenaria groenlandica, 36, 188; *lateriflora*, 131, 188; *leptoclados*, 188, 235; *macrophylla*, 188; *peploides*, 131, 188; *serpyllifolia*, 188, 235, var. *tenuior*, 235; *stricta*, 188; *verna*, var. *hirta*, 189.
Arethusa bulbosa, 82, 133.
Arisaema triphyllum, 132.
Aristida dichotoma, 128.
Aristolochia Sipho, 38, 39, Foliar Outgrowths from the Surface of the Leaf of, 38.
Arnica Chamissonis, 46.
 Aroostook Valley, A new *Kobresia* in the, 247.
 Arrow-grass, 174.
Artemisia cordata, 131; *stellariana*, 131.
Arthrodesmus incus, 223, 254; *octocornis*, 81.
Asclepias incarnata, var. *pulchra*, 131; *obtusifolia*, 129, 204, *purpurascens*, 204; *quadrifolia*, 204; *tuberosa*, 204; *verticillata*, 204.
Ascomycetes, 97.
Ascophyllum nodosum, 212.
Aspergillus cucurbitaceus, 98, 102.
Asperula galioides, 174, in America, *Galium erectum* and, 173.
Aspidium aculeatum, var. *Braunii*, 47, 236; *noveboracense*, 131; *spinulosum*, var. *dilatatum*, 38; *Thelypteris*, 131.
Asplenium ebeneum, 257, 272, 273, var. *Hortonae* 257, New Station for, 257, var. *proliferum*, 272, 273; *ebenoide*, 272; *Filix-foemina*, 47, 132; *pinnatifidum*, 272; *Trichomanes*, 128, 257.
Aspleniums, 257.
Asper acuminatus, 36; *linariifolius*, 128; *macrophyllus*, 36; *paniculatus*, 131; *puniceus*, 44, 50; *radula*, 46; *subulatus*, 133, 204; *tenuifolius*, 133, 204; *undulatus*, 130.
Asterella tenella, 170.
Asters, 260.
Astragalus Robbinsii, var. *Jesupi*, 191.
Atriplex arenarium, 131; *patulum*, var. *hastatum*, 133.
Avena striata, 33, 34, 197.
 Bacon, A. E. Experiment with the Fruit of Red Baneberry, 77.
 Balsam, Fir, 52.
Bambusina Brebissonii, 80, 254.
 Baneberry, Experiment with the Fruit of Red, 77; Red, 77.
 Bangia, 1; *fusco-purpurea*, 18.
Baptisia tinctoria, 129, 130.
Barbarea stricta, 204.
Bartonia tenella, 130.
Basidiomycetes, 97.
Bazzania triangularis, 171; *trilobata*, 51, 171.
 Beautiful *Pluteolus*, 197.
Berberis, 271.
Betula alba, var. *cordifolia*, 37; *nigra*, 204; *populifolia*, 129, 134; *pumila*, 33.
 Bibliography of *Ulvaceae*, 4.
Bidens, 90, 91; *bidentoides*, 90, 91, 92, *cernua*, 90, 131; *chrysanthemoides*, 132, 204; *comosa*, 90, 91, 92; *connata*, 90, 91, 92, 131; *discoidea*, 91; *Eatonii*, 92, var. *fallax*, 92; from the Merrimac Valley, New, 90; *frondosa*, 90, 91, 130, var. *anomala*, 91, 92.
 Biophytes, 127, 135, 136.
 Birch, 44, 45.
 Bissell, C. H. *Ajuga genevensis* in New England, 154; Botanical Trip to Salisbury, Connecticut, 32; *Galium erectum* and *Asperula galioides* in America, 173; *Lycopodium clavatum* and its Variety, 39; New Station for *Dentaria maxima*, 168.
 Blankinship, J. W. Plant-formations of eastern Massachusetts, 124.
Blasia pusilla, 170.
Blepharostoma trichophyllum, 51, 171.
 Blue-bell, 259.
 Bluet, 119.
Boehmeria cylindrica, 132.
 Bog Rosemary, 67.
 Botanical Club, Eighth Annual winter Meeting of the Vermont, 120; Ninth Annual field Meeting of the Vermont, 236.
 Botanical Society, Connecticut, 120; of Maine, Josselyn, 175; Organization of the Connecticut, 74.
 Botanical Trip to Salisbury, Connecticut, 32.
Botrychium lanceolatum, 203, 236, 274; *lunaria*, 275; *matricariaefolium*, 203, 236, 274, 275, 276, *simplex*, 275, var. *subcompositum*, 276; *tenebrosum*, 203, 274, 275, 276, Additional Notes on, 274; *ternatum*, 274.
Brachyelytrum erectum, 48.
Brasenia peltata, 134.

- Bread moulds, 97.
 Bridgewater, Massachusetts, List of
 Desmids found in Carver's Pond,
 79.
 Britton, B. M. A New England Sta-
 tion for *Buxbaumia indusiata*, Bri-
 del, 257.
Bromus ciliatus, 48.
 Bryophytes, 120.
Buda marina, var. *minor*, 236; *mari-*
tima, 131, 133.
 Buttercups, 260.
Buxbaumia, 258; *aphylla*, 258; *indusi-*
ata, 258, A New England Station
 for, 257.
Buxbaumias, 257.
Cakile americana, 131.
Calamagrostis canadensis, 46; *Langs-*
dorfii, 38, 46; *neglecta*, 248.
Calla palustris, 133.
Callithamnion, 15.
Callitriche heterophylla, 134.
Calocylindrus, 292; *connatus*, 255.
Calopogon, 259; *pulchellus*, 82, 133.
Calothrix, 208, 209; *pulvinata*, 208.
Caltha palustris, 132.
Campanula rotundifolia, 289.
Camptosorus, 272.
 Canada and New England, Recently
 recognized Species of *Crataegus* in
 eastern — I, 52; II, 108; III, 137; IV,
 159; V, 182.
 Cape Breton, *Linum catharticum* on,
 119.
Capsella Bursa-pastoris, 135.
Capsosiphon aureolus, 30.
Cardamine parviflora, 128; *pennsyl-*
vanica, 131, 132.
Carex, 248, 249, 251; *aquatilis*, 33;
brunnescens, 37; *cephalophora*, 249;
crinita, 36, 131, 249; *eburnea*, 33;
elachycarpa, 248, 249, 250, 251;
exilis, 289; *flava*, 249; *formosa*, 34;
granularis, 33; *interior*, 33, 248; *in-*
tumescens, 48; *lacustris*, 249; *magel-*
lanica, 37; *maritima*, 133; *Oederi*,
 249; *oligocarpa*, 34, 249; *pauciflora*,
 48; *pennsylvanica*, 130; *pubescens*,
 249; *rariflora*, 46; *rigida*, var. *Bige-*
lovii, 37, 45; *rostrata*, 33; *Schwein-*
itzii, 33; *stricta*, 132; *teretiuscula*,
 var. *ramosa*, 33; *tetanica*, var.
Woodii, 33; *viridula*, 249.
 Cariceae, 249.
Carpinus caroliniana, 134.
 Carver's Pond, Bridgewater, Massachu-
 setts, List of Desmids found in, 79.
Carya alba, 129; *porcina*, 129.
 Caryophyllaceae, 188, 235.
Cassandra calyculata, 45, 133.
Cassia marilandica, 203; *nictitans*, 203.
Castanea sativa, var. *americana*, 130.
Castilleja coccinea, 204.
Catoscopium, 200; *nigratum*, 200.
Ceanothus americanus, 129, 203.
Celtis occidentalis, 204.
Centaurea solstitialis, 256.
Cephalanthus occidentalis, 132.
Cephalozia bicuspidata, 51, 171; *caten-*
ulata, 171; *connivens*, 171; *curvi-*
folia, 171; *divaricata*, 171; *fluitans*,
 171; *Francisci*, 171; *Jackii*, 171;
lunulaefolia, 51, 171; *Macounii*, 171;
pleniceps, 171.
Cerastium arvense, 189; *nutans*, 189;
semidecandrum, 189; *viscosum*, 189,
 235; *vulgatum*, 135, 189, 235.
Chaetophora maritima, 210; *pellicula*,
 210.
 Chaetophoraceae, 210; of the United
 States, Ulothricaceae and, 72.
 Chaetophoreae, 210.
Chamaecyparis sphaeroidea, 134, 204.
 Chamberlain, E. B. New Stations for
 Maine Plants, 289; Western Plants
 at Cumberland, Maine, 119.
Chæra fragilis, 134.
Chenopodium album, 135; *rubrum*,
 131.
 Chesterville, Maine, Orchids of, 82.
Chiloscyphus ascendens, 171; *polyan-*
thus, 171.
Chimaphila maculata, 204.
Chiogenes serpyllifolia, 36, 45, 50, 133.
Choanephora, 97, 98, 99, 102; *ameri-*
cana, 97, 101, 102; *cucurbitarum*,
 99, 101, 102, 108; *infundibulifera*,
 97, 100; New England, 97; *Simsonii*,
 97, 100, 101, 292.
 Chroolepideae, 208, 210.
Chrysanthemum Leucanthemum, 135,
 177, 178, 179, 180, 181, and the Amer-
 ican White Weed, 177, var. *subpin-*
natifidum, 181.
Chrysopsis falcata, 128.
Cichorium, 135.
Cicuta bulbifera, 132; *maculata*, 132.
Cinna pendula, 36.
Circaea alpina, 132; *Lutetiana*, 132.
Cladium mariscoides, 133.
Cladonia rangiferina, 45, var. *alpestris*,
 45.
Cladophora, 234; *arcta*, 18; *expansa*,
 27; *glaucescens*, 28.
 Cladophorae, 2.

- Claytonia caroliniana*, 188, 213; *virginica*, 188.
Clematis verticillaris, 192, in the Middlesex Fells, 192.
Clintonia borealis, 36, 133.
Closterium acerosum, 80, 222; *acuminatum*, 80, 254; *Brebissonii*, 80; *cucumis*, 222; *Deanae*, 80; *Ensis*, 255; *Jenneri*, 252; *juncidum*, 255; *lineatum*, 222, 252; *Lunula*, 252; *macilentum*, 80; *ovale*, 80; *robustum*, 80; *rostratum*, 80; *setaceum*, 80; *striatum*, 80, var. *intermedium*, 255; *subtile*, 252; *Venus*, 255.
 Clover, 260; Red, 290.
 Club, Eighth Annual winter Meeting of the Vermont Botanical, 120; Ninth Annual field Meeting of the Vermont Botanical, 236.
Cnicus horridulus, 204; *muticus*, 36.
Codiolum, 233; *pusillum*, 232, forma *americanum*, 232.
Coleochaete, 107.
 Collins, F. S. Isaac Holden, 219; Lorin Low Dame, 121; Notes on Algae, — V. 204, VI. 231; *Ulothricaceae* and *Chaetophoraceae* of the United States, 72; *Ulvaceae* of North America, 1.
 Collins, J. F. *Corallorhiza innata* and *Taraxacum erythrospermum* in Rhode Island, 291; Some Notes on Mosses with Extensions of Range, 199; *Woodsia glabella* in Maine, 286.
Collinsonia canadensis, 204, 236.
Cololejeunea Biddlecomiae, 171.
Comandra livida, 37.
 Common Dandelion, 32.
Compositae, 178.
Conferva, 72, 73.
Coniferae, 246.
Conioselinum, 292; *canadense*, 33, 35.
 Connecticut Botanical Society, 120, Organization of, 74; Botanical Trip to Salisbury, 32; *Dentarias* of, 213; Dwarf Mistletoe in, 202; *Schwalbea americana* in, 40; Swamp, An Hour in a, 196.
Conocephalum conicum, 170.
Conopholis americana, 136.
 Contributions from the Cryptogamic Laboratory of Harvard University — LV., Mycological Notes, 97.
Corallorhiza, 291; *innata*, 82, 291, 292, and *Taraxacum erythrospermum* in Rhode Island, 291; *multiflora*, 82, 291; *odontorhiza*, 204, 291.
Corema Conradii, 128.
Coreopsis, 91; *bidentoides*, 91; *rosea*, 130; *trichosperma*, 204.
Cornus canadensis, 132; *sericea*, 131.
 Correction, *Gaylussacia dumosa* and *frondosa* in New Hampshire, A, 276; *Splachnum ampullaceum*, A, 169.
Corrigiola littoralis, 190.
Corydalis glauca, 128.
Corylus americana, 130; *rostrata*, 130.
Cosmarium amoenum, 223, var. *tumidum*, 81; *Boeckii*, 253; *Botrytis*, 80, 253; *Broomei*, 222, 255; *capense*, 255; *coelatum*, 223; *intermedium*, 253; *laeve*, var. *septentrionale*, 223, 253, 255; *margaritifera*, 80; *moniliforme*, 80; *nitidulum*, 255; *octhodes*, 223; *ornatum*, 81, var. *minor*, 253; *Portianum*, 255; *protractum*, 253; *pseudobroomei*, 223; *punctulatum*, 253; *pyramidatum*, 80, 223; *Quasillus*, 253; *reniforme*, 80; *scenedesmus*, 222; *Schliephackeanum*, 81; *speciosum*, 222; *subcrenatum*, 223; *suborbiculare*, 81; *taxichondrum*, 80; *tetropthalum*, 223; *tumidum*, 80, 223; *undulatum*, var. *crenulatum*, 221.
Crataegus, 52, 114; *Aboriginum*, 163; *acutiloba*, 117, 139, 141, 144; *Alnorum*, 153; *anomala*, 110; *aquilonaris*, 185; *ascendens*, 141; *Bissellii*, 65; *blandita*, 147, 148; *Brunetiana*, 164; *coccinea*, 159, 168; *cognata*, 58; *conjuncta*, 57; *contigua*, 115; *crudelis*, 143; *Crus-galli*, 53; *delucida*, 139; *demissa*, 139; *dissimilis*, 149; *dissona*, 60; *dumicola*, 183; *exclusa*, 108, 109; *exigua*, 52; *Faxoni*, 161; *Fernaldi*, 166, 167; *fertilis*, 182; *festiva*, 54; *flabellata*, 114, 116; *floreana*, 145; *fluvialis*, 117; *Forbesae*, 151; *fretalis*, 112; *fucosa*, 137; *genialis*, 148; *glaucophylla*, 140; *Gravesii*, 159; *Hargerii*, 66; *Holmesiana*, 112; in eastern Canada and New England, Recently recognized species of, — I, 52, II, 108, III, 137, IV, 159, V, 182; *irrasa*, 116; *Jackii*, 162; *Jesupi*, 61, 191; *Keepii*, 165; *littoralis*, 59; *lobulata*, 110, 111; *matura*, 144, 145; *media*, 150; *membranacea*, 186; *modesta*, 62; *monstrata*, 146; *Oxyacantha*, 167; *pastorum*, 147, 148; *Peckii*, 63; *Pequotorum*, 55; *pilosa*, 56; *polita*, 111; *praecoqua*, 167; *praecox*, 167, 168; *Pringlei*, 108, 109, 110; *pruinosa*, 54; *Randiana*, 142; *rhombifolia*, 183; *Robesoniana*,

- 110; *Robinsoni*, 184; *scabrida*, 114; *Stonei*, 62; *succulenta*, 183; *tenella*, 137; *Thayeri*, 113.
Crotalaria sagittalis, 129.
 Cryptogamic Laboratory of Harvard University, Contributions from, — LV. Mycological Notes, 97.
Cryptotaenia canadensis, 203, 204.
 Cumberland, Maine, Western Plants at, 119.
Cunninghamella africana, 98; *echinulata*, 98.
Cuscuta, 291; *Epithymum*, 291; *Gronovii*, 136; *trifolia*, 291, in Massachusetts, 290.
 Cushman, J. A. List of Desmids found in Carver's Pond, Bridgewater, Massachusetts, 79; Notes on New England Desmids, — I, 221, II, 252.
 Cynareae, 256.
Cyperus, 192; *aristatus*, 130; *dentatus*, 130; *filiculmis*, 128, 129; *flavescens*, 130; *Grayi*, 128; *Houghtoni*, 192, in Vermont, Second Station for, 191; *Schweinitzii*, 192; *strigosus*, 131.
Cypripedium acaule, 83, 129; *pubescens*, 83.
Cystopteris bulbifera, 273.
 Daisies, 260.
 Daisy, Ox-eye, 177; White, 177.
 Dame, L. L., Biographical notice of, 121; Notice of death, 76.
 Dandelion, Common, 32; Red-seeded, 32.
Danthonia spicata, 129.
 Deane, W. *Gaylussacia dumosa* and *frondosa* in New Hampshire: — a Correction, 276.
Decodon verticillatus, 132.
Delesseria, 204, 206; *alata*, 204, 207, β *angustifolia*, 207, var. *denticulata*, 205, 206; *angustissima*, 207; *Baerii*, ϵ *spinulosa*, 207; *Beeriana*, var. *spinulosa*, 205; *denticulata*, 205, 206, 207, var. *angustifolia*, 207; *Holmi-ana*, 207; *Montagneana*, 206, 207; *Montagnei*, 204, 206, 207, α *typica*, 207, β *angustifolia*, 207, var. *angustifolia*, 206; *revoluta*, 206; *spinulosa*, 205, 207.
Dentaria, 169; *anomala*, 217, *diphylla*, 168, 169, 213, 214, 215, 216, 217; *heterophylla*, 169, 215, 218; *incisa*, 216; *laciniata*, 168, 169, 215, 217, 218; *maxima*, 168, 169, 214, 215, 216, 217, A new Station for, 168.
Dentarias of Connecticut, 213.
Deschampsia flexuosa, 129.
Desmarestia aculeata, 211.
Desmidium aptogonium, 80, 254; *Bai-leyi*, 80, 254; *cylindricum*, 80, 254; *Swartzii*, 80, 254.
 Desmids, 79, 81, 135, 221, 252; found in Carver's Pond, Bridgewater, Massachusetts, List of, 79; Notes on New England, — I, 221, II, 252.
Desmodium cuspidatum, 203, 236; *marilandicum*, 203; *paniculatum*, 130; *rotundifolium*, 203.
 Dewya, 249.
Dianthus Armeria, 189; *barbatus*, 189; *deltoides*, 189.
Diapensia lapponica, 37.
 Diatoms, 135.
Diblepharis, 103, 104.
Dicentra canadensis, 168; *Cucullaria*, 168.
 Diemisa, 249.
Diervilla trifida, 36, 46.
Dionaea, 267.
Diplonaema, 3.
Diplophyllia albicans, 171; *apiculata*, 171; *taxifolia*, 51, 171.
Distichlis maritima, 133.
Docidium, 252; *baculum*, 80; *coronatum*, 80; *crenulatum*, 80; *nodosum*, 80; *repandum*, 80; *trabecula*, 80, 255; *truncatum*, 80.
 Dodder, 290.
Draba caroliniana, 203; *verna*, 203.
Drosera, 265, 266, 267, 269, 271; *binata*, 265, 266, 268, 270, 271; *capillaris*, 270; *cistiflora*, 268; *filiformis*, 130, 265, 266, 267, 268, 270; *flagellifera*, 266, 268; *intermedia*, 49, 267, 268, 269, 270, 271, Reversionary Stages experimentally induced in, 265, var. *americana*, 130, 133; *linearis*, 266; *longifolia*, 266; *lunata*, 268; *rotundifolia*, 133, 265, 266, 267, 270.
 Droseraceae, 266, 267.
Dryas, 281, 282, 283; *Drummondii*, 154, 281; from New Hampshire, Pursh's Report of, 281; *integrifolia*, 281, 282; *octopetala*, 281; *tenella*, 281, 282, 283.
 Dutchman's Breeches, 168.
 Dwarf Mistletoe in Connecticut, 202.
 Eames, E. H. *Dentarias* of Connecticut, 213; Dwarf Mistletoe in Connecticut, 202; Organization of the Connecticut Botanical Society, 74.
 Eaton, A. A. Additional Notes on

- Botrychium tenebrosus*, 274; Interesting Form of *Leersia oryzoides*, 118; Three new Varieties of *Isoetes*, 277.
- Eaton, L. O. Orchids of Chesterville, Maine, 82.
- Echinodorus*, 84, 85, 86, 87, 88; *cordifolius*, 88; *parvulus*, 83, 85, 86, 87, 88, 89, Generic position of, 85, Observations on, 83; *radicans*, 86, 88, 89; *rostratus*, 88, 89; *subulatus*, 84, 85; *tenellus*, 86, 87.
- Ecological Excursion to Mount Ktaadn, 41.
- Eighth Annual winter Meeting of the Vermont Botanical Club, 120.
- Eleocharis*, 251; *acicularis*, 131; *melanocarpa*, 130; *olivacea*, 130; *ovata*, 131; *tuberculosa*, 130.
- Elodea canadensis*, 134.
- Elodes campanulata*, 131.
- Elyna*, 250.
- Empetrum nigrum*, 35, 45, 49, 50, var. *andinum*, 35.
- Enditria, 249.
- Enteromorpha, 2, 3, 7, 8, 18, 27, 28; *acanthophora*, 19, 29, 31; *arctica*, 22; *aureola*, 30; *clathrata*, 20, 22, 26, 28, 31, forma *prostrata*, 29, var. *crinita*, 26, var. *erecta*, 28, var. *prostrata*, 26, var. *ramulosa*, 29; *compressa*, 19, 21, 22, 23, 24, 25, 31, forma *subsimplex*, 25; *crinita*, 19, 26, 28, 31; *cruciata*, 19, 27, 31; *erecta* 20, 28, 31; *fascia*, 19, 20; *flexuosa*, 19, 21, 23, 31; *Hopkirkii*, 20, 26, 27, 28, 31; *intestinalis*, 14, 18, 19, 21, 23, 24, 31, forma *clavata*, 23, forma *cylindrica*, 23, forma *maxima*, 23, forma *tenuis*, 23, var. *compressa*, 25, var. *micrococca*, 20, var. *minima*, 24; *lingulata*, 21, 22; *Linza*, 3, 10, 14, 18, 19, 23, 24, 31, forma *crispata*, 24, forma *lanceolata*, 24; *marginata*, 19, 25, 31; *micrococca*, 19, 20, 25, 31, var. *subsalsa*, 19, 20; *minima*, 19, 20, 24, 31, forma *glacialis*, 25, forma *rivularis*, 24; *percursa*, 2, 19, 26, 27, 31, var. *ramosa*, 26, var. *simpliuscula*, 26; *plumosa*, 27; *prolifera*, 19, 21, 22, 26, 31, var. *arctica*, 22, var. *trabeculata*, 22, var. *tubulosa*, 19, 22; *ramulosa*, 19, 29, 31; *salina*, 19, 22, var. *polyclados*, 19, 22; *tubulosa*, 22; *torta*, 19, 26, 31.
- Epigaea repens*, 129.
- Epilobium coloratum*, 131; *lineare*, 133.
- Epiphegus virginiana*, 136.
- Equisetum*, 203; *limosum*, 132; *pratense*, 203; *sylvaticum*, 134.
- Eriocaulaceae, 188.
- Eriocaulon Parkeri*, 175, 176; *Ravenelii*, 176; *septangulare*, 130, 134, 176, 188.
- Eriophorum gracile*, 48, 133; *vaginatum*, 36, 133.
- Erodium malacoides*, 39, at Lawrence, Massachusetts, 39.
- Erythronium americanum*, 132.
- Euanemone*, 155.
- Euastrum* sp. 255; *affine*, 81; *ansatum*, 81; *elegans*, 81, 221, 223; *gemmatum*, 81; *integrum*, 81; *magnificum*, 81; *verrucosum*, 81, 253.
- Eupatorium perfoliatum*, 131; *purpureum*, 131; *sessilifolium*, 204; *teucrifolium*, 204.
- Euphorbia polygonifolia*, 131.
- Evans, A. W. Preliminary Lists of New England Plants, — XI, *Hepaticae*, 170.
- Excursion to Mount Ktaadn, Ecological, 41.
- Experiment with the Fruit of red Baneberry, 77.
- Extensions of Range, Some Notes on Mosses with, 199.
- Fagus ferruginea*, 130.
- Fairy Flax, 119.
- Fern, 272, Walking, 196, 272.
- Fernald, M. L. American Representatives of *Luzula vernalis*, 193; *Andromeda Polifolia* and *A. glaucophylla*, 67; *Arabis Drummondii* and its eastern Relatives, 225; *Chrysanthemum Leucanthemum* and the American White Weed, 177; *Linum catharticum* on Cape Breton, 119; New Bidens from the Merrimac Valley, 90; New Kobresia in the Aroostook Valley, 247; Pursh's Report of *Dryas* from New Hampshire, 281; Red-flowered *Anemone riparia*, 154; Some Variations of *Triglochin maritima*, 174.
- Ferns, 120, 197, 245, 260; Ostrich, 196.
- Festuca tenella*, 129.
- Field Meeting of the Vermont Botanical Club, Ninth annual, 236.
- Fimbristylis autumnalis*, 130.
- Fir, 45; Balsam, 52.
- Flax, Fairy, 119.
- Flora of Lynn, Massachusetts, Two Plants new to the, 256; of Mount Ktaadn, Additions to the vascular,

- 46; of Mt. Saddleback, Franklin County, Maine, 35.
- Flynn, N. F. Ninth Annual field Meeting of the Vermont Botanical Club, 236; second Station for *Cyperus Houghtoni* in Vermont, 191.
- Foliar Outgrowths from the Surface of the Leaf of *Aristolochia Sipho*, 38.
- Fossombronia foveolata, 170; salina, 170; Wondraczekii, 170.
- Foster, M. Identity of *Iris Hookeri* and the *Asian I. setosa*, 157.
- Fragaria, 32; vesca, 32.
- Franklin County, Maine, Flora of Mt. Saddleback, 35.
- Fraxinus americanus, 132.
- Freeman, G. F. *Lycopodium Selago* on Mt. Holyoke, Massachusetts, 290.
- Fringed Gentian, 75.
- Fruit of red Baneberry, Experiment with, 77.
- Frullania Asagrayana, 171; Brittoniae, 171; eboracensis, 171; Oakesiana, 52, 171; plana, 171; riparia, 171; squarrosa, 171; Tamarisci, 171; virginica, 171.
- Fucaceae, 135.
- Fucus, 24.
- Fungi, 97, 99, 103, 107, 120, 136; Oomycetous, 102; Zygomycetous, 102.
- Fungus, 95, 98.
- Further Notes on the twelfth Preliminary List of New England Plants, 235.
- Galeopsis Ladanum, 204; Tetrahit, 50.
- Galera, 198, 199.
- Galinsoga in Maine, 258; parviflora, var. hispida, 258.
- Galium boreale, 236; erectum, 173, 174, and *Asperula galeoides* in America, 173; Mollugo, 173, 174; pilosum 204; tinctorium, var. labradoricum, 33; triflorum, 50.
- Gaultheria procumbens, 129.
- Gaylussacia dumosa, 276, and frondosa in New Hampshire:—a Correction, 276; frondosa, 204, 276; resinosa, 129.
- Generic Position of *Echinodorus parvulus*, 85.
- Gentian, Fringed, 75.
- Genus *Trisetum* in Andover, Massachusetts, 289.
- Geocalyx graveolens, 171.
- Geranium carolinianum, 203; maculatum, 130, 132, 256; pratense, 256; Robertianum, 132.
- Gerardia flava, 129; maritima, 133; purpurea, var. pauperula, 131; quercifolia, 129; tenuifolia, 129.
- Geum album, 130; rivale, 133.
- Glastonbury Thorn, 167.
- Glaux maritima, 131.
- Globeflower, 34.
- Gloeocapsa, 30.
- Glyceria canadensis, 131; fluitans, 132.
- Golden-rod, 260.
- Gomontia Holdenii, 220.
- Goodyera pubescens, 82; repens, var. ophioides, 37, 82; tessellata, 82.
- Gracillaria, 231, 232; confervoides, 231, 232; multipartita, 231, 232, var. angustissima, 231, 232.
- Grass, 289.
- Grasses, 245.
- Graves, F. M. *Schwalbea americana* in Connecticut, 40.
- Gray Herbarium, Insecticides used at the, 237.
- Green Algae, 2.
- Grimaldia fragrans, 170.
- Gymnogongrus Griffithsia, 232; norvegicus, 232.
- Gymnomitrium concinnatum, 171; corallioides, 171.
- Gypsophila muralis, 189.
- Habenaria, 263; blephariglottis, 83; dilatata, 46, 83; fimbriata, 83; Hookeri, 83; hyperborea, 83, 264; lacera, 83, 133, 263, 264; Natural Hybrids in *Spiranthes* and, 261; obtusata, 48, 83; orbiculata, 83; psycodes, 83, 263, 264, X lacera, 264; tridentata, 82; virescens, 82.
- Halohelophytes, 133.
- Halohydrophytes, 135.
- Halohygrophytes, 131.
- Harger, E. B. New Station for *Phaseolus perennis*, 291.
- Harpanthus scutatus, 171.
- Harvard University, Contributions from the Cryptogamic Laboratory of,—LV. Mycological Notes, 97.
- Harvey, L. H. Ecological Excursion to Mount Ktaadn, 41; *Splachnum ampullaceum*, a Correction, 169.
- Hedeoma pulegioides, 129.
- Helianthemum canadense, 129.
- Helophytes, 126, 127, 132, 133.
- Hemicarex, 249, 250.
- Hemicarpha subsquarrosa, 130.
- Hemlocks, 196.

- Hepatica acutiloba*, 33.
Hepaticae, 51; of Mt. Ktaadn, 50; Preliminary Lists of New England Plants, — XII, 170.
Herbarium, Insecticides used at the Gray, 237.
Heterodoxia denticulata, 206, 207.
Hibiscus, 99; *Moscheutos*, 203.
Hieracium, 289; *floribundum*, 289; *prealtum*, 289; *scabrum*, 130; *venosum*, 129.
 Hitherto undescribed Pipewort from New Jersey, 175.
 Hobble-bush, 260.
 Holden, I., Notice of death, 219.
 Holyoke, Massachusetts, *Lycopodium* Selago on Mt., 290.
Hormiscia, 73.
Hottonia inflata, 134.
 Hour in a Connecticut Swamp, 196.
Houstonia caerulea, 119, 131; *purpurea*, var. *longifolia*, 128, 202.
Hudsonia ericoides, 128; *tomentosa*, 128.
Hyalotheca dissiliens, 79, 254, var. *hians*, 254; *mucosa*, 254.
 Hybrids in *Spiranthes* and *Habenaria*, Natural, 261.
Hydrocoleum Holdenii, 220.
Hydrocotyle umbellata, 204.
Hydrophytes, 126, 127, 134, 135.
Hypophytes, 126, 127, 130, 131.
Hypericum canadense, 130; *ellipticum*, 131; *mutilum*, 131; *nudicaule*, 128; *perfoliatum*, 135.
Hypnum cordifolium, 199, 200; *Richardsonii*, 200.
Hypoglossum denticulatum, 205, 206, 207.
Hypoxis erecta, 204.
 Identity of *Iris Hookeri* and the Asian *I. setosa*, 157.
Ilea, 7, 30; *fulvescens*, 3, 20, 30, 31.
Ilex glabra, 128, 204; *laevigata*, 134, 204; *opaca*, 204; *verticillata*, 131, 134.
Illecebraceae, 190.
Impatiens fulva, 132.
 Insecticides used at the Gray Herbarium, 237.
 Interesting Form of *Leersia oryzoides*, 118.
Ipomoea, 101.
Iris, 157, 158; *ensata*, 158; *Hookeri*, 157, and the Asian *I. setosa*, Identity of, 157; *prismatica*, 133; *pseudacorus*, 158; *setosa*, 157, 158, 159, Identity of *Iris Hookeri* and the Asian, 157, var. *canadensis*, 158; *tridentata*, 157; *tripetala*, 157; *versicolor*, 131, 132, 158, 159.
Isoetes, 277; *Braunii*, 279; *canadensis*, 279, var. *Robbinsii*, 279; *Eatoni*, 280; *echinospora*, var. *Braunii*, 48, var. *muricata*, 277, var. *robusta*, 277; *Engelmanni*, 279; *foveolata*, 280, var. *plenospora*, 280; *Gravesii*, 280; *heterospora*, 44, 48; *lacustris*, 279, var. *maxima*, 279; *riparia*, 277, 278, 279, 280, var. *major*, 279; *saccharata*, 277, 278, var. *Amesii*, 278; Three new Varieties of, 277; *Tuckermani*, 277, 278, 279, 280.
Iva frutescens, 133, 204.
Jamesoniella autumnalis, 51, 171.
 Jesup, H. G., Notice of death, 191.
 Jones, L. R. Eighth Annual winter Meeting of the Vermont Botanical Club, 120.
 Josselyn Botanical Society of Maine, 175; Meeting of the, 202.
Jubula Hutchinsiae, 171.
Juncaceae, 193.
Juncodes pilosum, 195.
Juncoides pilosum, 193, 195.
Juncus alpinus, 248; *articulatus*, 48; *balticus*, 248; *dichotomus*, 130; *effusus*, 131; *Gerardi*, 133; *Greenei*, 130; *pelocarpus*, 130; *pilosus*, var. *o*, 193; *trifidus*, 37; *vernalis*, 193.
Jungermannia lanceolata, 171; *pumila*, 171; *sphaerocarpa*, 171.
Jungermanniaceae, 171.
Juniperus communis, var. *alpina*, 128; *virginiana*, 128.
Kalmia angustifolia, 37, 45; *glauca*, 35, 45, 133; *latifolia*, 289.
Kantia Sullivantii, 171; *trichomanis*, 51, 171.
 Knight, O. W. Records of some Plants new to Maine, 71.
 Knowlton, C. H. Flora of Mount Saddleback, Franklin County, Maine, 35.
Kobresia, 249, 250, 251; *elachycarpa*, 251; in the Aroostook Valley, Maine, A new, 247; *macrantha*, 250.
Krigia virginica, 128.
 Ktaadn, Additions to the vascular Flora of Mount, 46; Ecological Excursion to Mount, 41; *Hepaticae* of Mount, 50.
Lactucas, 256.
 Lady-slipper, 259.

- Larix americana*, 134.
Lathyrus maritimus, 131; *palustris*, 132.
 Lawrence, Massachusetts, *Erodium malacoides* at, 39.
 Leaflet of the Seal Harbor Village Improvement Society, 259.
 Leavitt, R. G. Foliar Outgrowths from the Surface of the Leaf of *Aristolochia Siphon*, 38; Reversionary Stages experimentally induced in *Drosera intermedia*, 265.
Lechea minor, var. *maritima*, 128; *tenuifolia*, 128; *thymifolia*, 128.
Ledum groenlandicum, 35; *latifolium*, 45, 133.
Leersia, 118; *oryzoides*, 118; forma *glabra*, 118, Interesting form of, 118.
Leguminosae, 246.
Lejeunea cavifolia, 171.
Lemna, 287; *minor*, 135; *trisulca*, 135.
Lemnaceae, 287.
Lens ervilea, 72; *esculenta*, 72.
Leontodon autumnalis, 135.
Lepidium ruderales, 135; *virginicum*, 135.
Lepidozia reptans, 51, 172; *setacea*, 172; *sphagnicola*, 172.
Lespedeza capitata, 128, 129; *polystachya*, 130; *violacea*, 203.
Leucanthemum vulgare, 178.
Leucothoe racemosa, 204.
Lichens, 234.
Liliaceae, 246.
Linaria canadensis, 129.
Lindera Benzoin, 134.
Limnanthemum lacunosum, 134.
Linnaea borealis, 50.
Linum catharticum, 119, on Cape Breton, 119.
Liparis Loeselii, 82.
 List of Desmids found in Carver's Pond, Bridgewater, Massachusetts, 79.
 List of New England Plants, Further notes on the twelfth Preliminary, 235.
Listera cordata, 82.
 Lists of New England Plants, Preliminary, — XI, *Hepaticae*, 170; XII, 188.
 Liverworts, 50.
Lobelia cardinalis, 284, 285, 286; *Dortmanna*, 50, 130, 134; *inflata*, 129; *spicata*, 131; *syphilitica*, 284, 285, 286; \times *syphilitico-cardinalis*, 284, 285, 286.
Lonicera ciliata, 36.
Lophocolea Austini, 172; *bidentata*, 172; *heterophylla*, 172; *minor*, 172.
Lophozia, 51; *alpestris*, 172; *barbata*, 172; *bicrenata*, 172; *Floerkii*, 172; *gracilis*, 172; *incisa*, 172; *inflata*, 51, 172; *lycopodioides*, 172; *Lyoni*, 172; *Marchica*, 172; *Michauxii*, 51; *ventricosa*, 51, 172.
Ludwigia alternifolia, 203; *palustris*, 132.
Lunatia, 209; *heros*, 209.
Lunularia cruciata, 170.
Lupinus perennis, 129, 203.
Luzula Carolinae, 194, 195; *pilosa*, 193, 194, 195, 196, 193, 195; *plumosa*, 194, 195; *saltuensis*, 195; *spadicea*, var. *melanocarpa*, 37; *vernalis*, 193, 194, 195, American Representatives of, 193.
Lychnis, 236; *alba*, 189, 235, 236; *chalconica*, 189; *Coronaria*, 189; *dioica*, 189, 236; *diurna*, 189; *Flos-cuculi*, 189, 235; *vespertina*, 189.
Lycopodium, 290; *annotinum*, 47, var. *pungens*, 38, 47; *clavatum* and its Variety, 39, var. *monostachyon*, 40; *inundatum*, 45, 47, var. *Bigelovii*, 134; *lucidulum*, 47; *Selago*, 47, 290, on Mount Holyoke, Massachusetts, 290; *sitchense*, 44, 47.
Lycopus sinuatus, 131; *virginicus*, 131.
Lygodium palmatum, 204.
Lyngbya, 27; *aestuarii*, 27.
 Lynn, Massachusetts, Two Plants new of the Flora of, 256.
Lysimachia quadrifolia, 130; *stricta*, 131; *thyrsiflora*, 204.
Magnolia glauca, 203.
Maianthemum canadense, 132.
 Maine, Flora of Mount Saddleback, Franklin County, 35; *Galinsoga* in, 258; *Josselyn Botanical Society of*, 175; *Plants, New Stations for*, 289; *Orchids of Chesterville*, 82; *Records of some Plants new to*, 71; *Western Plants at Cumberland*, 119; *Woodsia glabella* in, 286.
Marchantia polymorpha, 170.
Marchantiaceae, 170.
Marguerite, 177.
 Marine Algae, 135.
 Marsh *Andromeda*, 68.
Marsilia quadrifolia, 134.
Marsupella emarginata, 51, 172; *spha-celata*, 172; *ustulata*, 172.
 Massachusetts, *Cuscuta trifolia* in, 290; *Erodium malacoides* at Law-

- rence, 39; Genus *Trisetum* in And over, 289; List of Desmids found in Carver's Pond, Bridgewater, 79; *Lycopodium Selago* on Mount Holyoke, 290; Plant Formations of eastern, 124; Records of *Wolffia columbiana* in, 287; Two Plants new to the Flora of Lynn, 256.
- Matricaria*, 288; *discoidea*, 288, in New Hampshire, 288.
- Meadow-sweet, 260.
- Medeola virginica*, 132.
- Medicago lupulina*, 135.
- Meeting of the Josselyn Society, 202; of the Vermont Botanical Club, Eighth Annual winter, 120, Ninth Annual field, 236.
- Melampyrum americanum*, 130.
- Meltrema*, 249.
- Menyanthes trifoliata*, 133.
- Merrimac Valley, New *Bidens* from the, 90.
- Mesophytes, 126, 127, 129.
- Metzgeria conjugata*, 170.
- Metzgeriaceae, 170.
- Micrasterias americana*, 81, 223, 253, forma genuina, 253, var. 253, var. recta, 81; furcata, 81; laticeps, 81; mahabuleshwariensis, 81; muricata, 81; radiosa, 81.
- Microcoleus chthonoplastes*, 233, 234; tenerrimus, 233, 234.
- Microstylis ophioglossoides*, 82.
- Middlesex Fells, *Clematis verticillaris* in the, 192.
- Mikania scandens*, 204.
- Mimulus ringens*, 131.
- Mistletoe in Connecticut, Dwarf, 202.
- Mitella nuda*, 197.
- Mnium cinclidioides*, 200.
- Moccasin-flower, 259.
- Mollugo verticillata*, 188.
- Monoblepharis*, 103, 104, 105, 107; sp., 108; brachyandra, 103, 104, 105, 106, 108; fasciculata, 103, 105; insignis, 103, 105; macrandra, 106; Notes on, 103; ovigera, 106; polymorpha, 103, 104, 105, 106, 108; regnigens, 106; sphaerica, 103, 105.
- Monostroma*, 2, 7, 10, 13, 15, 17, 18; angicavum, 13, 14; arcticum, 11, 13, 14, 31, var. intestiniforme, 11, 14; Blyttii, 10, 11, 12, 31; Collinsii, 18; crassiusculum, 12; crepidinum, 11, 16, 31; cylindraceum, 13, 14; fuscum, 11, 12, 15, forma Blyttii, 12, 31; forma splendens, 12; Grevillei, 11, 12, 13, 14, 31, forma lactuca, 15, var. arctica, 13, 14, var. VahlII, 13, 14; groenlandicum, 10, 11, 18, 31; Lactuca, 15; latissimum, 10, 11, 16, 17, 31; leptodermum, 11, 15, 16, 31; lubricum, 12; pulchrum, 11, 14, 15, 16, 31; quarternarium, 11, 17, 31, saccodeum, 13, 14; splendens, 12; undulatum, 11, 14, 15, 31, var. Farlowii, 11, 14, 15; VahlII, 13; zosteriolum, 16.
- Monotropa Hypopytis*, 49, 136; uniflora, 49, 136.
- Montia fontana*, 188.
- Moore, G. T. Roses vs. Railroads, 93.
- Morss, R. D. *Clematis verticillaris* in the Middlesex Fells, 192.
- Mosses, with Extension of Range, Some notes on, 199.
- Moulds, Bread, 97.
- Moulton, D. H. Meeting of the Josselyn Society, 202.
- Mount Holyoke, Massachusetts, *Lycopodium Selago* on, 290; Ktaadn, Additions to the vascular Flora of, 46, Ecological Excursions to, 41, Hepaticae of, 50; Saddleback, Franklin County, Maine, Flora of, 35.
- Mucor*, 99.
- Mucors*, 97.
- Mycological Notes, 1-2, Contribution from the Cryptogamic Laboratory of Harvard University,—LV, 97.
- Mylia anomala*, 172; Taylori, 51, 172.
- Myrica asplenifolia*, 129, 130; cerifera, 128; Gale, 132.
- Myrioblepharis*, 107.
- Myriophyllum ambiguum*, 134; spicatum, 134; tenellum, 130, 134.
- Myxonema*, 72.
- Naia flexilis*, 134; indica, var. gracillima, 134.
- Nardia crenulata*, 172; haematosticta, 172; hyalina, 172; obovata, 172.
- Natural Hybrids in *Spiranthes* and *Habenaria*, 261.
- Nemopanthus fascicularis*, 134.
- Nemopanthus fascicularis*, 35.
- Neskiza, 249.
- New *Bidens* from the Merrimac Valley, 90.
- New England, *Ajuga genevensis* in, 154; *Choanephora*, 97; Desmids, Notes on,—I, 221, II, 252; Plants, Further Notes on the twelfth Preliminary Lists of, 235; Preliminary

- Lists of, — XI, Hepaticae, 170, XII, 188; Recently Recognized species of *Crataegus* in eastern Canada and, — I, 52, II, 108, III, 137, IV, 159, V, 182; Station for *Buxbaumia indusiata* Bridel, 257; *Viola arvensis* in, 155.
- New Hampshire, *Gaylussacia dumosa* and *frondosa* in, — a Correction, 276; *Matricaria discoidea* in, 288; Pursh's Report of *Dryas* from, 281.
- New Jersey, Hitherto undescribed Pipewort from, 175.
- New Kobresia in the Aroostook Valley, 247.
- New Station for *Asplenium ebeneum* Hortoniae, 257, for *Dentaria maxima*, 168; for *Phaseolus perennis*, 291.
- New Stations for Maine Plants, 289.
- New Varieties of *Isoetes*, Three, 277.
- Ninth Annual field Meeting of the Vermont Botanical Club, 236.
- Nitella flexilis*, 134.
- Nonnea rosea*, 72.
- North America, The Ulvaceae of, 1.
- Notes on Algae, — V, 204, VI, 231; *Botrychium tenebrosus*, Additional, 274; New England Desmids, — I, 221, II, 252; *Monoblepharis*, 103; Mosses with Extensions of Range, Some, 199; the twelfth Preliminary List of New England Plants, Further, 235.
- Notothylas orbicularis*, 173.
- Nuphar advena*, 134; *Kalmianum*, 44, 49, 134; *odorata*, 134, var. *minor*, 44, 49.
- Oakesia sessilifolia*, 132.
- Observations on *Echinodorus parvulus*, 83.
- Odontochisma denudatum*, 172; *prostratum*, 172.
- Oedocephalum*, 97, 98, 102; *echinulatum*, 98.
- Oedogonium*, 107.
- Oenothera pumila*, 129.
- Olotrema*, 249.
- Onoclea sensibilis*, 134, 274.
- Oomycetous Fungi, 102.
- Orchidaceae, 264.
- Orchids, 82, 259, 260, 264; of Chester-ville, Maine, 82.
- Organization of the Connecticut Botanical Society, 74.
- Orontium aquaticum*, 134.
- Orthotrichum splachnoides*, 201.
- Oryzopsis asperifolia*, 197.
- Osmorrhiza* sp., 49.
- Osmun, A. V. *Cuscuta trifolia* in Massachusetts, 290.
- Osmunda cinnamomea*, 47, 132, 134, 196; *Claytoniana*, 45, 47; *regalis*, 134.
- Ostrich ferns, 196.
- Ostrya virginiana*, 130.
- Outgrowths from the Surface of the Leaf of *Aristolochia Siphonifolia*, 38.
- Oxalis Acetosella*, 35; *cymosa*, 34; *filipes*, 33, 34; *stricta*, 34; *violacea*, 203; Yellow-flowered, 33, 34.
- Ox-eye Daisy, 177.
- Pallavicinia Lyellii*, 170.
- Panaeolus*, 199.
- Panicum verrucosum*, 130; *virgatum*, 130.
- Pansy, 155.
- Parasites, 136.
- Paronychia argyrocoma*, 190.
- Pease, A. S. *Erodium malacoides* at Lawrence, Massachusetts, 39; Genus *Trisetum* in Andover, Massachusetts, 289.
- Pediastrum*, 81; *Boryanum*, 81; *Ehrenbergii*, 81; *pertusum*, 81.
- Pellia*, 51; *epiphylla*, 170.
- Peltandra undulata*, 132.
- Penium*, 252; *closterioides*, 80; *Digitus*, 222, 254; *margaritaceum*, 254.
- Pentstemon pubescens*, 204.
- Pepper-root, 168.
- Percursaria*, 3; *percursa*, 26.
- Perenosporae*, 101.
- Petasites palmata*, 44, 50.
- Phaseolus perennis*, 291, New Station for, 291.
- Phelps, O. A. An Hour in a Connecticut Swamp, 196.
- Phleum pratense*, 36.
- Phragmites communis*, 131.
- Phryma Leptostachya*, 204.
- Phycomycetes*, 107.
- Phyllophora Brodiaei*, 232.
- Phytolacca decandra*, 188.
- Phytolaccaceae*, 188.
- Picea nigra*, 36, 49; *rubra*, 36.
- Pilea pumila*, 132.
- Pilinia*, 208, 209, 210; *diluta*, 210; *maritima*, 210; *rimosa*, 207, 208, 210.
- Pine Apple Weed, 288.
- Pines, 196.
- Pinus rigida*, 128, 129; *Strobus*, 132, 134.
- Pipewort from New Jersey, Hitherto undescribed, 175.
- Plagiochila asplenioides*, 172; *Sullivantii*, 172.
- Plant-formations of eastern Massachusetts, 124.

- Plantago lanceolata*, 135; major, 50, 135.
 Plants at Cumberland, Maine, Western, 119; Further Notes on the twelfth Preliminary List of New England, 235; New Stations for Maine, 289; New to Maine, Records of some, 71; new to the Flora of Lynn, Massachusetts, Two, 256; Preliminary Lists of New England, — XI, Hepaticae, 170, XII, 188.
Platanus occidentalis, 132, 134.
Plectonema Battersii, 233; *Golenkinianum*, 233.
Pluchea camphorata, 133, 204.
Pluteolus, 197, 198; A beautiful, 197; *coprophilus*, 198; *expansus*, 198.
Pluteus, 198.
Poa alpina, 48; *annua*, 135; *debilis*, 34, 197.
Podostemon ceratophyllus, 134.
Pogonia, 259; *ophioglossoides*, 82, 133.
Polygala pauciflora, 130; *polygama*, 129, 204; *sanguinea*, 130.
Polygonella articulata, 131.
Polygonum acre, 131; *aviculare*, 135; *exsertum*, 289; *Hydropiper*, 131; *tenue*, 128.
Polypodium vulgare, 128, 257.
Polysiphonia, 28, 212; *fastigiata*, 212.
Polystichum Plaschnickianum, 272.
Pontederia cordata, 132.
Populus balsamifera, 49; *tremuloides*, 129, 258.
Porella pinnata, 172; *platyphylla*, 172; *rivularis*, 172.
Porphyra, I, 210, 211; *abyssicola*, 212; *amplissima*, 211, 212; *coccinea*, 211; *laciniata*, 210, 211, 212, forma *epiphytica*, 212; forma *umbilicalis*, 211; var. *umbilicalis*, 212; *leucosticta*, 210, 211, 212; *linearis*, 212; *miniata*, 211, 212; *tenuissima*, 211, 212.
Portulaca grandiflora, 190; *oleracea*, 188; *pilosa*, 190.
Portulacaceae, 188.
 Position of *Echinodorus parvulus*, Generic, 85.
Potamogeton confervoides, 44, 48; *crispus*, 134, 135; *natans*, 134; *spirillus*, 134.
Potamogetons, 238.
Potentilla Anserina, 133; *arguta*, 204; *tridentata*, 36, 256.
Poterium canadense, 289.
Prasiola, 16.
Preissia quadrata, 170.
 Preliminary Lists of New England Plants, — XI, Hepaticae, 170, XII, 188, Further Notes on the twelfth, 235.
Prenanthes alba, 132, 204; *serpentaria*, 129, 204; *trifoliolata*, 46.
Pringsheimia, I.
Proserpinaca palustris, 132; *pectinacea*, 134.
Protoderma, I.
Prunella vulgaris, 50.
Prunus cuneata, 128; *maritima*, 131; *pennsylvanica*, 128; *pumila*, 204; *serotina*, 129; *virginiana*, 128.
Pseudokobresia, 250.
Psilocarya scirpoides, 130.
Pteridium spinulosum, 206, 207.
Pteris aquilina, 47.
Pterodes, 194.
Ptilidium ciliare, 51, 172.
Puccinellia maritima, 133.
 Pursh's Report of Dryas from' New Hampshire, 281.
Pycnanthemum muticum, 204.
Pyrus americana, 35; *arbutifolia*, 45, 49, 131.
Quercus alba, 129; *coccinea*, 132, var. *tinctoria*, 129; *ilicifolia*, 128; *prinoides*, 128; *rubra*, 129.
Radula complanata, 172; *obconica*, 172; *tenax*, 172.
 Railroads, Roses vs., 93.
Ralfsia, 209.
 Rand, E. L. *Galinsoga* in Maine, 258; *Matricaria discoidea*, DC. in New Hampshire, 288; Observations on *Echinodorus parvulus*, 83.
 Range, Some Notes on Mosses, with Extensions of, 199.
Ranunculi, 238.
Ranunculus, 86; *abortivus*, 132, var. *eucyclus*, 33; *acris*, 135; *allegheniensis*, 34, 203; *aquatilis*, var. *trichophyllus*, 134; *bulbosus*, 135; *Cymbalaria*, 130; *fascicularis*, 128, 203; *multifidus*, 134, 204; *septentrionalis*, 131.
Reboulia hemisphaerica, 170.
 Recently recognized Species of *Crataegus* in eastern Canada and New England, — I, 52, II, 108, III, 137, IV, 159, V, 182.
 Records of some Plants new to Maine, 71; of *Wolffia columbiana* in Massachusetts, 287.
 Red Algae, I; Baneberry, 77, Experiment with the Fruit of, 77; clover,

- 290; flowered *Anemone riparia*, 154; seeded *Dandelion*, 32.
- Relatives, *Arabis Drummondii* and its eastern, 225.
- Report of *Dryas* from New Hampshire, Pursh's, 281.
- Representatives of *Luzula vernalis*, American, 193.
- Reversionary Stages experimentally induced in *Drosera intermedia*, 265.
- Rhamnus alnifolia*, 33, 196.
- Rhexia virginica*, 130.
- Rhinanthus Crista-Galli*, 50.
- Rhizoclonium*, 27.
- Rhode Island, *Corallorhiza innata* and *Taraxacum erythrospermum* in, 291.
- Rhododendron nudiflorum*, 204; *Polifolium*, 71; *Rhodora*, 35, 133.
- Rhodospermeae*, 1.
- Rhopalomyces*, 97, 98, 100, 101, 102; *cucurbitarum*, 98; *elegans*, 102, var. *cucurbitarum*, 102; *strangulatus*, 99.
- Rhus copallina*, 129; *glabra*, 130; *Toxicodendron*, 128, 132, 134, 274; *typhina*, 128, 130; *venenata*, 132, 134.
- Rhynchospora alba*, 133.
- Riccardia latifrons*, 170; *multifida*, 170; *palmata*, 170; *pinguis*, 170; *sinuata*, 170.
- Riccia arvensis*, 170; *crystallina*, 170; *fluitans*, 135, 170; *natans*, 135; *Sullivantii*, 170.
- Ricciaceae*, 170.
- Ricciocarpus natans*, 170.
- Robinson, B. L. Further Notes on the twelfth Preliminary List of New England Plants, 235; Generic Position of *Echinodorus parvulus*, 85; Hitherto undescribed *Pipewort* from New Jersey, 175; Insecticides used at the Gray Herbarium, 237; Preliminary Lists of New England Plants, XII, 188; Records of *Wolffia columbiana* in Massachusetts, 287; *Viola arvensis* in New England, 155.
- Rosa lucida*, 132.
- Rosemary, Bog, 67; Wild, 68.
- Roses, 93, 94, 95; vs. Railroads, 93; Wild, 260.
- Rotala ramosior*, 204.
- Rubus canadensis*, 130; *Chamaemorus*, 36; *hispidus*, 131; *occidentalis*, 130.
- Rumex brittanica*, 132; *crispus*, 135; *maritimus*, 119.
- Ruppia maritima*, 135.
- Saddleback, Franklin County, Maine; Flora of Mount, 35.
- Sagina apetala*, 190; *decumbens*, 189, 190; *nodosa*, 189, var. *pubescens*, 189, 236; *procumbens*, 189, 190.
- Sagittaria*, 86; *heterophylla*, 132; *pussilla*, 84, 85; *teres*, 134; *variabilis*, 132.
- Salicornia ambigua*, 131, 204; *herbacea*, 133.
- Salisbury, Connecticut, Botanical Trip to, 32.
- Salix balsamifera*, 37; *candida*, 32; *discolor*, 131; *lasianдра*, 34; *lucida*, 33, 34; *myrtilloides*, 289; *rostrata*, 131; *tristis*, 204.
- Salsola Kali*, 131.
- Sanguinaria canadensis*, 132.
- Sanicula gregaria*, 204.
- Saponaria officinalis*, 189; *Vaccaria*, 189.
- Saprophytes, 136.
- Sargent, C. S. Recently recognized Species of *Crataegus* in eastern Canada and New England, —I, 52, II, 108, III, 137, IV, 159, V, 182.
- Sarracenia purpurea*, 49, 133, 190.
- Sarraceniaceae*, 190.
- Sassafras officinale*, 129.
- Saxifraga pennsylvanica*, 131; *stellaris*, var. *comosa*, 46; *virginiensis*, 128.
- Scapania convexula*, 172; *curta*, 172; *irrigua*, 172; *nemorosa*, 172; *paludosa*, 172; *subalpina*, 172; *umbrosa*, 173; *undulata*, 52, 173.
- Scheuchzeria*, 49; *palustris*, 48.
- Schoenoxiphium*, 249.
- Schwalbea americana*, 40; in Connecticut, 40.
- Scirpus atrovirens*, 131; *caespitosus*, 45, 46; *maritimus*, 133; *pungens*, 133; *rubrotinctus*, var. *confertus*, 289.
- Scleranthus annuus*, 190.
- Sclerieae*, 249.
- Seal Harbor Village Improvement Society, Leaflet of, 259.
- Sea-weeds, 135.
- Second Station for *Cyperus Houghtoni* in Vermont, 191.
- Sedge, 247, 248.
- Sedges, 245.
- Selaginella rupestris*, 128.
- Senecio obovatus*, 33.
- Sequoia*, 271.
- Sericocarpus conyzoides*, 129; *solidagineus*, 204.
- Silene acaulis*, 189; *antirrhina*, 189, var. *divaricata*, 189, 235; *apetala*, 235; *Armeria*, 189; *Cucubalus*, 189;

- dichotoma, 189; gallica, 189; nivea, 189, 235; noctiflora, 189; nutans, 189; pendula, 189; pennsylvanica, 128, 189, 203; stellata, 189.
- Sium cicutaeifolium*, 132.
- Skunk cabbage, 197.
- Smilacina trifolia*, 37, 48, 133.
- Smilax rotundifolia*, 128.
- Society, Connecticut Botanical, 120; Leaflet of the Seal Harbor Village Improvement, 259; Meeting of the Josselyn, 202; of Maine, Josselyn Botanical, 175; Organization of the Connecticut Botanical, 74.
- Solanum rostratum*, 119.
- Solidago bicolor*, 129; canadensis, 130; lanceolata, 131; latifolia, 132; macrophylla, 36, 46; nemoralis, 129; odora, 129; rugosa, 130; semper-virens, 131, 133; serotina, 132; speciosa, 204; tenuifolia, 130, 204; ulmifolia, 132.
- Some Notes on Mosses, with Extensions of Range, 199; Variations of *Triglochin maritima*, 174.
- Sparganium eurycarpum*, 132; simplex, 132.
- Spartina*, 24, 25; juncea, 133; stricta, var. glabra, 133.
- Species of *Crataegus* in eastern Canada and New England, Recently recognized,—I, 52, II, 108, III, 137, IV, 159, V, 182.
- Spergula arvensis*, 189.
- Spergularia borealis*, 189; rubra, 189; salina, 189, 236.
- Sphaerozosma*, 252; filiforme, 80; pulchrum, 80, var. planum 80; spinulosum, var., 252.
- Sphagnum*, 36, 274; spp., 133, 134.
- Sphenolobus exsectaeformis*, 173; exsectus, 173; Michauxii, 173; minutus, 173.
- Spiraea salicifolia*, 131; tomentosa, 131.
- Spiranthes*, 262; and *Habenaria*, Natural Hybrids in, 261; cernua, 82, 131; gracilis, 82, 129; 261, 262, 263, 264; X *intermedia*, 262, 263, 264, 285; latifolia, 197, 204; praecox, 261, 262, 263, 264; simplex, 128.
- Spirodela polyrhiza*, 135.
- Spirogyra*, 233; decima, 233, var. *triplicata*, 233.
- Spirotaenia condensata*, 80.
- Splachnum ampullaceum*, 169, a Correction, 169; roseum, 44, 169.
- Sprague, C. J., Notice of death, 234.
- Spruce, 45, 202.
- Squirrel corn, 168.
- Stachys hyssopifolia*, 130.
- Stages experimentally induced in *Drosera intermedia*, Reversionary, 265.
- Statice Limonium*, var. *caroliniana*, 131, 133.
- Station for *Asplenium ebeneum* Hortonae, A new, 257; for *Buxbaumia indusiata* Bridel, A New England, 257; for *Cyperus Houghtoni* in Vermont, A second, 191; for *Dentaria maxima*, A new, 168; for *Phaseolus perennis*, A new, 291.
- Stations for Maine Plants, New, 289.
- Staurostrum*, 221; anatinum, 81; crenulatum, 81; dejectum, 222, var. mucronatum, 253; echinatum, 224, 253; hirsutum, 222, 224; leptocladum, 81; macrocerum, 81; mucronatum, 224; muticum, 81, var. minor, 224, 254, 255; orbiculare, 81, 223; polymorphum, 81; pseudosebaldi, 224; punctulatum, 81, 254; pygmaeum, 222; saxonicum, 222; subarcuatum, 222, 254.
- Steeple-bush, 260.
- Steironema ciliatum*, 131.
- Stellaria aquatica*, 189, 190; borealis, 189; graminea, 189, 190, 235, var. lanceolata, 190; *Holostea*, 189; humifusa, 189; longifolia, 189; longipes, 190, 235; media, 135, 190; uliginosa, 190.
- Stereodon Richardsonii*, 200.
- Stigeoclonium*, 73, 210.
- Streptanthus angustifolius*, 230.
- Streptopus amplexifolius*, 34, 36.
- Strophostyles angulosa*, 203.
- Suaeda linearis*, 133.
- Subularia, 84.
- Sundews, 265, 267.
- Swamp, An Hour in a Connecticut, 196.
- Symplocarpus foetidus*, 134.
- Tamarack, 202.
- Tanacetum Leucanthemum*, 178.
- Taraxacum erythrospermum*, 32, 292, in Rhode Island, *Corallorhiza innata* and, 291; officinale, 32, 135, var. palustre, 32.
- Taxus canadensis*, 196.
- Temnoma*, 292; setiforme, 51, 173.
- Tephrosia virginiana*, 129.
- Tetmemorus Brebissonii*, 81.
- Tetragona expansa*, 235.

- Tetranema, 3; percursum, 26.
 Thalictrum purpurascens, 203.
 Thaxter, R. Contributions from the Cryptogamic Laboratory of Harvard University,—LV. Mycological Notes, 97.
 Telephorae, 120.
 Thorn, 137; Glastonbury, 167.
 Three new Varieties of Isoetes, 277.
 Tiarella, 197.
 Tilia americana, 132.
 Tribonemia, 72.
 Trichocolea tomentella, 173.
 Trifolium hybridum, 36; pratense, 290; repens, 49.
 Triglochin maritima, 133, 174, 175, 248; Some Variations of, 174; palustris, 174, 248.
 Trillium cernuum, 132.
 Triodia purpurea, 131.
 Trip to Salisbury, Connecticut, Botanical, 32.
 Trisetum, 289, in Andover, Massachusetts, The Genus, 289; palustre, 289; subspicatum, var. molle, 35, 289.
 Trollius, 35; laxus, 34.
 Tsuga canadensis, 130.
 Turritella, 209.
 Turritis brachycarpa, 226, 228, 230, 231; glabra, 226, β , 230, var. β , 226; patula, 229; retrofracta, 228; stricta, 226, 228, 229, 230.
 Two Plants new to the Flora of Lynn, Massachusetts, 256.
 Typha angustifolia, 133; latifolia, 132.
 Typhaceae, 246.
 Ulmus americana, 132.
 Ulothrichaceae, 210; and Chaetophoraceae of the United States, 72.
 Ulva, 3, 7, 18, 24; aureola, 30; californica, 8, 9; clathrata, 29, 30, var. erecta, 28, var. prostrata, 29, var. ramulosa, 29, var. Rothiana, f. prostrata, 29, var. uncinata, 29; compressa, 30, var. racemosa, 25; enteromorpha, var. compressa, 25, 30, var. intestinalis, 23, 30, var. lanceolata, 24; fasciata, 8, 10, forma caespitosa, 10, forma lobata, 10, forma taeniata, 10; Hopkirkii, 28, 31; intestinalis, 31; Lactuca, 3, 8, 10, 13, 15, 31, var. Lactuca, 8, 31, var. latissima, 9, 31, var. mesenteriformis, 9, var. rigida, 8, 31; latissima, 8, 9, 31, var. Linza, 24; Linza, 24; marginata, 25; mesimopedioides, 17; mesenteriformis, 9; percursa, 26; rigida, 9.
 Ulvaceae, 1, 2, 7; Bibliography of, 4; of North America, 1.
 Uncinia, 249.
 United States, Ulothrichaceae and Chaetophoraceae of, 72.
 Urospora, 73; penicilliformis, 18.
 Utricularia, 197; cornuta, 130, 133; inflata, 135; minor, 197; purpurea, 135; resupinata, 130; vulgaris, 135.
 Uvularia perfoliata, 204.
 Vaccinium caespitosum, 36; canadense, 45; corymbosum, 131; macrocarpon, 82, 133; Oxycoccus, 36, 133; pennsylvanicum, 128, var. angustifolium, 36; uliginosum, 36, 45; 49; vacillans, 129, 130; Vitis-Idaea, 37, 49.
 Vallisneria spiralis, 134.
 Variations of Triglochin maritima, Some, 174.
 Varieties of Isoetes, Three new, 277.
 Vaucheria, 107; intermedia, 107.
 Veratrum viride, 132, 134.
 Verbena bracteosa, 119.
 Vermont Botanical Club, Eighth Annual winter Meeting of, 120, Ninth Annual field Meeting of the, 236; Second Station for Cyperus Houghtoni in, 1901.
 Veronica scutellata, 132.
 Viburnum cassinoides, 36; dentatum, 131.
 Village Improvement Society, Leaflet of the Seal Harbor, 259.
 Viola arvensis, 155, 156, in New England, 155; blanda, 45, 131, 132; cucullata, 132, 134; lanceolata, 130, 131; ovata, 128, 129; pedata, 128, 129, 203; pubescens, 132; Rafinesquii, 155, 156; rotundifolia, 236; scabriuscula, 168; sororia, 236; tenella, 155; tricolor, 156, var. arvensis, 155.
 Violets, 120.
 Walking fern, 196, 272.
 Waters, C. E. Asplenium ebeneum proliferum, 272.
 Webster, H. A beautiful Pluteolus, 197.
 Weed, Pine Apple, 288; White, 177.
 Wentworth, L. A. Two Plants new to the Flora of Lynn, Massachusetts, 256.
 Western Plants at Cumberland, Maine, 119.
 White Daisy, 177; Weed, 177, Chrys-

- anthemum *Leucanthemum* and the American, 177.
 Wild Rosemary, 68; Roses, 260.
 Winter Meeting of the Vermont Botanical Club, Eighth Annual, 120.
 Witches' brooms, 202.
Wolffia, 287; *columbiana*, 287, 288, in Massachusetts, Records of, 287.
 Wood anemone, 155.
Woodsia glabella, 286, in Maine, 286; *ilvensis*, 128, 257; *obtusata*, 204.
Woodwardia angustifolia, 204.
 Woolson, G. A. A new Station for *Asplenium ebeneum* *Hortonae*, 257.
Xanthidium antilopaeum, var. *polymazum*, 81.
Xanthium canadense, 135, var. *echinatum*, 131.
Xenococcus Kernerii, 234; *Schousboei*, 234.
 Xerophytes, 126, 127, 128.
 Yellow-flowered *Oxalis*, 33, 34.
Zannichellia palustris, 135.
Zizania sp., 48; *aquatica*, 132.
Zizia aurea, 204.
Zostera marina, 135.
Zygomycetes, 102.
Zygomycetous fungi, 102.



Blanche Ames del.

LOBELIA CARDINALIS, at the left. L. SYPHILITICA, at the right.
L. SYPHILITICO \times CARDINALIS, in the middle.

BOTANICAL PUBLICATIONS

SYNOPTICAL FLORA OF NORTH AMERICA, by A. GRAY and others. Vol. I. Fascicles 1 and 2. A critical treatment of forty-five families of polypetalæ (*Ranunculaceæ* to *Polygalaceæ*) 1895-1897. \$5.20.—GRAY HERBARIUM of Harvard University, Cambridge, Mass.

FLORA OF MT. DESERT ISLAND, MAINE, by EDWARD L. RAND and JOHN H. REDFIELD. With a Geological Introduction by WILLIAM MORRIS DAVIS. 1894. And a new map of the Island. 1901. Price \$2.00, post free.—Address EDWARD L. RAND, 53 State Street, Boston, Mass.

NEW ENGLAND WILD FLOWERS AND THEIR SEASONS, by WILLIAM WHITMAN BAILEY. Price 75 cents net.—PRESTON & ROUNDS Co., Providence, R. I.

FERN FLORAS

THE FERN BULLETIN has begun the publication of a series of Fern Floras of the States which will include every State in the Union. They are written by the most prominent student in each State and give distribution, abundance, etc., and name the localities for rare species. Every plant lover should have this series. The other features of the Bulletin continue to improve. Subscriptions 75 cents a year. The Floras also printed separately at 15 cents each. Address THE FERN BULLETIN, Binghamton, N. Y.

GENERAL ADVERTISEMENTS.

HOME GROWN LILIES.

Fresh from Beds. Wild Flowers, Hardy plants of all kinds.
Send for catalogue.

F. H. HORSFORD, Charlotte, Vt.

CONCORD NURSERIES, Concord, Massachusetts. Established on Minot Pratt's Homestead by his son, F. G. PRATT. Over 300 species grown, including *Rhodora*, pink and white, *Andromedas*, *Cornels*, *Viburnums*, *Kalmias*, *Ivy*, *Myrica*, *Benzoin*, *Hamamelis*. E. Mass. plants collected. Catalogue.

JOURNAL OF THE MAINE ORNITHOLOGICAL SOCIETY. A quarterly journal of Maine Ornithology. "Bird Protection, Bird Study, the spread of the knowledge thus gained, these are our objects." Vol. V will be larger and better than previous vols. 50 cts. a year, 15 cts. per copy. Sample copy free.

J. MERTON SWAIN, Editor and Publisher, Waterville, Maine.

EXCHANGE some of the familiar plants of your locality for the peculiar and interesting plants of the arid regions of California and of the High Sierras, at the cost of postage one way. Send for list of herbarium specimens put up for exchange by

GEORGE B. GRANT,
637 Summit Ave., Pasadena, Calif

A Model Botanical Text-Book

LEAVITT'S OUTLINES OF BOTANY,	\$1.00
With Gray's Field, Forest and Garden Flora, . . .	1.80
With Gray's Manual of Botany,	2.25

For the High School Laboratory and Class Room.

By ROBERT GREENLEAF LEAVITT, A. M., of the Ames Botanical Laboratory. Prepared at the request of the Botanical Department of Harvard University.

THE practical exercises and experiments have been so chosen that they may be performed by schools with even simple apparatus. The instructions for laboratory study are placed in divisions by themselves, preceding the related chapters of descriptive text. The book combines the best features of the newest methods with that lucidity and definiteness which have given Dr. Gray's text-books their extraordinary success. It pays special attention to ecology, but morphology and physiology are also fully treated. The illustrations number 384, and have been drawn with great care and accuracy. The appendix contains valuable suggestions for the teacher, and the index is very complete.

American Book Company

New York

Cincinnati

Chicago

Boston

HARDY NATIVE AMERICAN PLANTS

and Carolina Mountain Flowers. Many new rare and local varieties.

HARLAN P. KELSEY, Landscape Architect,

Prop. Highlands Nursery,

Kawana, North Carolina.

Catalogues.

Tremont Building, Boston.

Consultation and plans for improvement of estates, private and public grounds, suburban properties and resorts.

THE PLANT WORLD,

An Illustrated Monthly Journal of Popular Botany,

Established 1897.

Edited by F. H. Knowlton, Charles Louis Pollard
and Cornelius L. Shear.

NOW INCLUDES THE ASA GRAY BULLETIN,

Each issue consisting of 20 pages, with a supplement of 8 pages, describing the families of flowering plants in systematic sequence. A copy of the new "Flora of Vermont" free to every new subscriber desiring it. Back volumes of The Asa Gray Bulletin can be furnished in limited quantity. Subscription Price of The Plant World \$1.00 per year. Sample copy free on receipt of 1-cent stamp if RHODORA is mentioned.

Address all communications to

The Plant World Co.,

Box 334. Washington, D. C.